



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 9 — CHART INFORMATION

SECTOR 9

THE BISMARCK ARCHIPELAGO

Plan.—First described is the NE coast of New Ireland from SE to NW. Then the SW coast of that island including St. Georg Channele and Gazelle Channel, also from SE to NW. Then the NW coast of New Ireland, New Hanover, and the passages between them are described from an E-W direction. The S and N coasts of New Britain are then described from E-W and W-E, respectively. Last is a description of the Admiralty Islands and the Ninigo Group.

General Remarks

9.1 The Bismarck Archipelago, which is a part of Papua New Guinea, includes all the islands between 0°45'S and 6°20'S, and between 142°50'E and 154°00'E. The archipelago includes the large islands of New Ireland and New Britain, and the smaller adjacent island groups such as New Hanover, the Duke of York group, and the Admiralty Islands.

Winds—Weather.—The Bismarck Archipelago is dominated by the NE trades from November to June. Gales seldom occur. The prevailing winds during the summer months are lighter and blow more often from the E and SE. The season of the lightest winds is usually from September to November.

Pressure changes are usually small. The average range of the barometer is between 1009mb and 1013mb. Fog is rare in this area.

Tides—Currents.—Data is lacking on tidal currents in this area, but the rates are believed to be from 0.5 to 2 knots with the strongest currents occurring in the narrower passages and channels. Non-tidal surface currents are usually weaker, having rates of 0.35 to 1.5 knots.

Along the NE coast of New Guinea and in the vicinity of the Admiralty Islands, the current sets NW, varying in velocity from 0.5 to 2 knots. During the early months of the year, it sets E along the N coast of New Guinea.

Observations indicate that the currents on the N coast of New Guinea are mostly weak and usually set with the wind. This also applies to the Solomon Islands and the Bismarck Archipelago. The currents in the narrow passages are exceptions to this rule.

The tropic tidal ranges in this area vary from 0.6 to 0.8m. The tides are mostly of a diurnal nature.

Caution.—Many of the islands described in this chapter have only been partially examined.

Numerous off-lying reefs have been discovered off the coasts of New Britain, and the charts are not always to be relied upon. The S coast of the island is inaccurately charted.

The area extending from the S side of Manus Island for 40 miles and including the Purdy Islands, is so little known that it should be regarded as dangerous.

It has been reported that vessels should pass outside of the islands off-lying the NE coast of New Ireland or to the S of it due to the uncertainty of the depths along the island's NE coast.

Islands East and Northeast of New Ireland

9.2 Green Islands (4°28'S., 154°11'E.), consisting of Nissan Island, Barahun Island, Sirot Island, and Pinipel Island, are on a raised densely-wooded coral atoll centered about 80 miles ENE of the S extremity of New Ireland. The islands are inhabited.

Pinipel Island, 101m high, is detached from the main atoll and 1.5 miles to the NNW. The island is cliffy and reported to be a good radar target. A reef extends from its W side.

Nissan Island, the largest island of the group, almost completely encloses a lagoon which has three entrances on its W side.

Tides—Currents.—A S current usually prevails along the W side of Nissan Atoll, being strongest off Middle Channel. At times, this set is reversed.

The maximum strength of the tidal currents in both Middle Channel and South Channel is 2 knots, except at springs, when it may reach 3 knots. During the Northwest Monsoon, there are overfalls in the entrance with the outgoing current. The currents inside the lagoon are weak.

Tides at Nissan Atoll are very irregular, diurnal tides occurring at times. The mean tidal range at the entrance of South Channel is about 0.7m.

Anchorage.—Anchorage is available with local knowledge in the lagoon. The main entrance is between the S end of Barahun Island and the S arm of Nissan Island, 0.35 mile S. The fairway between fringing reefs is 36 to 45m wide and has a least depth of 5.2m. A mid-channel course of 076° leads through the entrance. This entrance should not be attempted during strong NW winds. The other entrances are more difficult or for small boats only. Depths inside the lagoon range from 22 to 60m, with foul ground extending from the W and S sides. A small wharf, with a depth of 1.8m alongside, is at the NE side of the lagoon.

9.3 The Feni Islands (4°05'S., 153°40'E.) consist of two wooded islands and two small islets. They appear as five rounded hummocks from offshore. The Feni Islands are a good radar target from 20 miles. Except for native gardens, plantations, and groves of coconut palms scattered on the sloping terrain near the shore, the islands are forested.

These islands are reported to be about 1.5 miles SE of their charted position.

Ambitle Island rises to a height of 562m in its middle part; its N part is low and swampy. The island serves as a good radar target from 20 miles, but gives a poor return at 30 miles. A geyser, which throws up water to a height of 15.2m, is located on the island. A small islet stands on the SE side of a reef, about 0.2 mile off the NW side of the island.

Babase Island is 266m high and has four peaks. It has undulating and gently sloping terrain alternating with steep, sloping hills. Balum Islet, which is reported to be covered with forested hills, lies close off the N side of Babase Island.

Reefs, which sometimes break, extend from 1 to 1.5 miles N from both islands. A small drying reef lies off the E side of the group.

Salat Strait, the channel between Ambitle Island and Babase Island, is only about 0.2 mile wide and has depths of 9m in mid-channel. A rock, with a depth of less than 3.1m, lies near the middle of the N approach to the strait. A reef is located at the S end, on the E side of the channel. Several large reefs have also been reported in the N approach to the channel.

Anchorage.—Vessels with local knowledge can find good anchorage, in 24 to 26m, off the native village in the N bay on the E side of Ambitle Island. A coral patch, with a depth of 3.7m, is reported to lie about 0.3 mile off the S point of this bay.

Anchorage can be taken in Nanum Bay on the SW side of Ambitle Island. Fair shelter is afforded from the Northwest Monsoon and Southeast Trades.

Small vessels with local knowledge can anchor, in 9m, sheltered from both monsoons, between the before-mentioned small islet and the NW side of Ambitle Island.

The **Nuguria Islands** (3°12'S., 154°30'E.) are two groups of atoll islands and sandbanks surrounded by reefs. There are about 50 islets scattered along these atolls. Coconut plantations are situated on some of the islets. Vessels call occasionally to load copra and trochus shells. The two atolls are separated by a safe passage, about 3 miles wide.

Caution.—It was reported that the Nuguria Islands are about 5.5 miles WSW of their charted position.

Sable Islet, about 2.4m high and surrounded by a reef to a considerable distance, is 10 miles SSW of the S end of the Nuguria Islands.

9.4 The Tanga Islands (3°30'S., 153°18'E.) has Tefa Island, the S islet of the group, connected with Lif Island by a reef. The latter island rises to a considerable height. The Tanga Islands consist of three rather large islands and several smaller ones. The smaller islands are surrounded by sandy shores.

Malendok Island is the largest of the group and rises to a height of 480m. The shores are cliffy and rise steeply from the fringing reef. A coconut plantation is situated on the SW side of the island.

Boang Island is separated from Malendok Island by a 3 mile wide channel. Depths of 24 to 29m are found in the channel. A reef, with a depth of 3m, extends 1.75 miles from the SW side of Boang Island. A small islet stands on this reef. Boang Island has some sandy shores, but is mostly cliffy and steep. Boang Island is reported to be a poor radar target from 18 miles. Native gardens and coconut groves are situated on the S side of the island. A reef, on which are two small islets, extends about 1.3 miles W from the NW extremity of the island.

Anchorage.—Vessels with local knowledge can anchor, in about 35m, sand and coral, under the spit that extends NE from the SE end of Lif Island, with the native village bearing 276°. This anchorage is about 0.1 mile from the fringing reef. Vessels are cautioned against anchoring here during SE winds.

Anchorage can also be taken, in 26 to 29m, E of the reef and about 0.3 mile off the SW side of Boang Island. There is an anchorage off the village at the NW end of Boang Island.

Caution.—The outline of the Tanga Islands is reported to be incorrectly defined on the charts and they were reported to be 2.75 miles WNW of their charted position.

9.5 The Lihir Islands consist of Lihir Island and four smaller islands known as Sanambiet Island, Masahet Island, Mali Island, and Mahur Island.

Lihir Island (3°08'S., 152°35'E.) is volcanic and has some active mud craters. It rises to a height of 800m near its S end, and has a steep, rugged, and wooded coast, except for native gardens, coconut groves, and some areas of grass and scrub. There are some confined stretches of sand, but in most places cliffs and steep slopes rise directly from the fringing reef. Villages and settlements are situated in areas of low and sloping terrain near the shore. A conspicuous white building, with a green roof and short steeple, stands near the shore 2 miles NW of the S end of Lihir.

Luise Harbor, a small bay formed between two mountain spurs, indents the E coast of Lihir Island. Anchorage can be taken, in 18.3 to 22m, with a prominent red rock bearing 276°, distant 0.25 mile. The N part of the bay is shoal. Farther in to the SW and offering more shelter from SE winds, there is anchorage in shallower depths. A shoal, with a depth of 5.5m, extends about 1.5 miles N from the NW extremity of Lihir Island.

Sanambiet Island and Mali Island, with a small islet between them, stand on a reef close off the NE end of Lihir Island. The former is 37m high and the latter is 88m high; both are wooded.

Mahur Island is about 233m high, densely wooded, level topped, and has steep sides. There is a narrow sandy shore on the W side fringed by a narrow reef. The island is a good radar target from 19 miles, but gives a poor return from 28 miles.

Masahet Island is about 211m high and steep. A narrow white sandy beach with coconut palms fronts the E side of the island. Native settlements and landing places are situated on the SW side of the island.

9.6 The Tabar Islands (2°45'S., 152°00'E.) consist of Tabar Island, hilly with mountains rising to a height of 526m near the N end and 622m in the S part. Much of the coast is cliffy and steep sloping. The coast is fringed by a reef. Most of the settlements are situated on low ground near the shore. Tabar Island was reported (1971) to lie about 1 mile S of its charted position.

The Tabar Islands consist of the above island, Tatau Island, Simberi Island, and a few islets. The three large islands are mountainous and mostly covered with rain forests. Plantations and coconut groves are situated on the low ground along the coasts.

Tatau Island, 375m high, is close N of Tabar Island; its shores, indented by small bays and coves, are sand and pebbles closely backed by steep slopes.

Saraware Passage is the channel between Tabar Island and Tatau Island; the passage has a least depth of 16.4m and is about 90m wide at its narrowest point.

Simberi Island, separated from Tatau Island by a channel 1 mile wide between the fringing reefs, is circular in shape, 5 miles in diameter, and fringed by a reef. A dangerous rock has been reported to lie 4 miles W of the island. A volcanic cone slopes steeply to a height of 320m near the center of the island. The coast is steep, sloping, and cliffy, with some intervening stretches of sand. Some settlements are situated on the slopes near the shore. Reefs extend 6 miles from the W side of Simberi Island. Marwiu Islet and another islet are located on

the reef on the NW side of the island. These reefs break heavily at times.

Anchorage.—With local knowledge anchorage can be taken, as follows:

1. For small vessels, in 9.1 to 18.3m, from 0.3 to 0.4 mile offshore, off a coconut plantation on the NW side of Tabar Island, about 1.3 miles from its N end.

2. For small vessels, at the NE end of the channel between Tabar Island and Tatau Island. This anchorage is fronted by a reef, marked by a beacon, and is considered preferable to the anchorage mentioned immediately above.

3. In 22m, in Sigarriga Harbor, sheltered by wooded hills. This harbor is about 0.3 mile within the SW entrance to the channel between Tabar Island and Tatau Island. It should not be attempted by vessels over 61m in length unless fitted with twin propellers.

4. Off the W side of Simberi Island, inside the reef, in 24 to 26m, poor holding ground. This anchorage should not be used during the Northwest Monsoon.

9.7 Lyra Reef (1°45'S., 153°20'E.), with its S end about 90 miles NE of Simberi Island, is a steep-to, submerged coral atoll, about 25 miles in diameter. The depths around the perimeter of the reef are generally less than 37m, and in places are less than 11m. The least sounding taken on the reef proper was 6.1m on its N side. Within the reef there are depths of over 183m, but this area has not been surveyed. A gap on the NW side of the reef gives access to this deep water. The limits of the reef and the depths are subject to change, so less water than charted may be found. Depths of more than 2,743m are found within 5 miles of the reef. Other dangers in the area include:

1. A reef reported in position 2°05'S, 153°31'E.
2. Breakers reported NW of the charted position of Lyra Reef.
3. A depth of 22m reported in position 2°03'S, 153°21'E.
4. A depth of 29m reported in position 2°01'S, 153°31'E.
5. A reef about 0.1 mile long in a N-S direction reported in position 2°02'S, 153°48'E.
6. Breakers and shoal water reported in position 2°11'S, 153°03'E.

New Ireland

9.8 New Ireland is long and narrow island located NE of New Britain in the Bismarck Archipelago. A chain of mountains forms the spine of the island and attains an elevation of about 2,149m in the broad S part. The mountain chain rises from low hills that are a short distance inland from the forked NW coast and extends the length of the island. Separating the mountains in the chain are four principal passes, three between 92m and 153m high, and the fourth about 610m high. Westward of Cape Sena, on the E side of the island, the interior is broken and the mountains vary in height.

The Lelat Plateau is located near the middle of the island. Mount Bongmut, 1,300m high and located 5 miles SW of Cape Lemeris, stands on this plateau. Between this mountain and Cape Sena, there are two prominent dips, with the range falling to a height of 92m in the E and 183m in the W.

The Schleinitz Mountains, NW of the Lelat Plateau, attain a height of 750m. Northwest of this range the mountains become

lower and gradually fall to 213 to 244m. Mount Bokave, 500m high and prominent, is located about 40 miles SE of North Cape. The land SE of this cape is nearly flat, but is slightly elevated in the interior.

The mountains are densely wooded to the summits and only the lower spurs are inhabited. The N coast is steep-to and has a clear passage between it and the off-lying islands. The NW part is of coral formation and reef-fringed.

Caution.—Vessels should pass outside of the islands off-lying New Ireland, or to the S of it due to the uncertainty of the depths off the island's NE coast.

New Ireland—Northeast Coast

9.9 Widely-separated groups of islands lie between 13 and 115 miles off the E and NE coasts of New Ireland. The wide channels between the island groups and those separating them from New Ireland are mostly clear and have depths in excess of 183m.

The NE and E coasts of New Ireland are reef-fringed; widely-scattered islets, detached reefs, and shoals are encountered within 2 miles of the shore. Shoal water is reported to extend seaward for about 4 miles from a position about 8 miles NE of Cape St. George.

Tides—Currents.—A NNE current, with a rate of about 1.4 knots, was reported to the E of the S end of New Ireland. Observations over an 18 day period in November and December in an area from 5 to 25 miles SE of Cape St. George showed an average set to the SW at a rate of a little over 1 knot. This current was remarkably uniform during the period in which it was observed. Numerous tide rips occur in this area.

The current off the NE coast of New Ireland, between Cape Mamorodu and North Cape, set to the SE at a rate of 0.5 knot during the Northwest Monsoon. The tidal currents along the NE coast set NW during the rising tide and SE during the falling tide. A reliable source has stated that currents usually run NW at a rate of about 1 knot off the NE coast of New Ireland.

Cape St. George (4°51'S., 152°54'E.), marked by a light, is the extreme S point of New Ireland and is dominated by a mountain range and the high and rugged land to the N.

Between Cape St. George and Lambonot Point, 1.75 miles NE, the coast is rugged and steep-to. Iro Island, which lies about 0.6 mile E of Lambonot Point, is the outer danger. Loumtas Rock is about 0.5 mile SE of the same point.

Lanisso Bay, entered between Lambonot Point and Cape Bougainville, 3 miles NE, offers some protection from N winds. Laussamanni Rock lies in the N part of the bay, 2 miles N of Lambonot Point.

Lavinia Cove indents the W side of Lanisso Bay. The water shoals rapidly within the entrance and the S side and head of the cove appear encumbered with foul ground.

Anchorage.—Anchorage, protected from W winds, can be taken, in 9 to 13m, within the bluff forming the S entrance point of the cove.

Between Cape Bougainville and East Cape, the coast is bordered with stretches of sand alternating with small swamps and cliffs. This coast has not been examined closely, but shoals have been reported to extend up to 4 miles offshore from a point 3.5 miles N of Cape Bougainville. Cape Bougainville is

reported to be a good radar target at 19 miles. It has been reported that the Alas Islands, 10.5 miles NE of Cape Bougainville, are close to the shore and are not very prominent, but Tawau Island, 8 miles NE of the same point, is high, has a vertical rocky base, and serves as an excellent landmark.

Between **East Cape** (4°14'S., 153°06'E.) and Cape Matanatamberan, the coast, which is known as the Lauru District, has not been closely examined. The former point is about 61m high and is densely wooded for some distance, rising abruptly to a height of 381m.

Between Cape Matanatamberan and Cape Sass, 117 miles NW, the coast has not been completely surveyed; then to North Cape, it has only been partially examined. A mission station is situated at Kudukudu, about 13 miles W of Cape Matanatamberan.

Muliamia Harbor, about 10 miles NW of East Cape, is formed by an off-lying reef that lies up to 2 miles offshore. The harbor is about 0.2 mile wide and has depths over 3.6m. Small vessels with local knowledge can find anchorage, in 10.9 or 12.8m, protected from all winds except those from the N and E.

On the W side of Cape Sena, off Kombon Plantation, anchorage is available, in 22m, uneven bottom, about 0.5 mile offshore.

Porpop Harbor, entered about 1.5 miles S of Cape Matanatamberan, is nearly 1 mile long in a NNW-SSE direction and 137 to 457m wide between reefs. Depths in the harbor are at least 14.6m.

9.10 Elizabeth Bay, entered between Cape Matanatamberan and Cape Dingra, is open to all but SE winds. It affords anchorage to vessels with local knowledge, in 35m, partly protected from the N by shoals and reefs. There are many villages around the shores of the bay.

Caution.—Between Cape Namarodu and a point about 8 miles SSE, there is a sunken barrier reef lying from 0.5 to 1.5 miles offshore. It is reported to have a depth of 4.9m; the sea often breaks on it. Vessels should give the coast a wide berth in this vicinity.

Nabuto Bay (3°38'S., 152°27'E.), entered W of Cape Namarodu, is fringed by a reef that extends 0.5 mile offshore. The W side and head of the bay are fringed by reefs which extend 0.65 mile and 0.25 mile offshore, respectively.

Namatanai Road indents the SE part of Nabuto Bay; there is a small inner harbor with its entrance between the reefs, about 90m wide, which affords good anchorage and shelter to small craft. There is a government station, post office, and airport at Namatanai. Bopire village is situated on the W side of the bay. There is a wharf in the harbor, with a depth of 3.7m alongside.

The depths in Nabuto Bay are very irregular and the bay is open to winds between the NE and NW. A heavy swell sets into the bay during strong SE winds.

Anchorage.—Anchorage can be taken, in 29m, in Namatanai Road, about 0.3 mile from the coastal reef, with a chapel bearing 205°. This leads over a bank, with depths of 12.8 to 16.5m, about 0.3 mile E of **Trapez Reef** (3°39'S., 152°27'E.).

Anchorage can be taken, in 20m, with the boathouse at Bopire in line with a depression in the mountain ridge bearing 261°. Caution is necessary as this range passes close N of a 4.6m shoal. Vessels up to 76m long can also anchor, in 18.3m, about 0.2 mile off the fringing reef on each side of the harbor.

Between Nabuto Bay and Karu Bay, about 20 miles NW, the coast is bordered by sandy stretches that are separated in most places by low cliffs and steep rising slopes. Belik, a plantation village, is situated about 15 miles NW of Cape Namarodu. **Mumu Islet** (3°26'S., 152°16'E.) is about 0.3 mile offshore and about 3.5 miles NW of the plantation. The islet is 46m high and densely wooded. A small river, which is spanned by a bridge near its mouth, discharges into Karu Bay, S of the islet.

Anchorage.—Anchorage can be taken by large vessels with local knowledge, in 33 to 35m, in Karu Bay. The anchorage is sheltered from the N by Mumu Islet and on the E by a reef about 0.4 mile offshore. Vessels approaching from the N should pass close W of Mumu Islet, avoiding the fringing reef, and two reefs, each with a depth of 4.6m, about 0.3 mile and 0.4 mile SSW of the islet. These reefs can usually be distinguished.

9.11 Cape Panakondo (3°08'S., 151°46'E.) is a prominent projection 18 miles WNW of Cape Lemeris, which is also prominent. The coast, between Karu Bay and a position about 4 miles SE of Cape Panakondo, has some stretches of sand, but for the most part rises in cliffs and steep slopes that are the seaward edges of low, narrow terraces. Backing the low terraces are steep limestone slopes that culminate on the high plateau of the interior. Several small coconut plantations are near the shore, but elsewhere the coast and inland slopes are covered with rain forest.

Between a position about 4 miles SE of Cape Panakondo and Fangalawa Bay, the coast is fronted by sandy beaches. The sandy shores are broken by small cliffy headlands and swamps which surround the heads of some of the inlets. Backing the coastal lowlands are mountains, the slopes of which are cut by gorges that have swift streams flowing through during the wet season.

Between Fangalawa Bay and North Cape, the shore is low and sandy in most places. Low cliffs and steep slopes, which rise to low terraces, interrupt the sandy beaches. There are coconut plantations on the coast, but they rarely extend over 2 miles inland. On the lower slopes of the hills are many villages and settlements which have native gardens.

Kapsu Point (2°41'S., 151°02'E.) can be identified by an overhanging conical-shaped mountain, which is prominent amongst the chain of hills. Kapsu Road, about 2 miles SE of Kapsu Point, affords indifferent anchorage for vessels with local knowledge, in 24m, because of the heavy swell that sets into the bay, and to the confined space, within which a convenient depth can be obtained. Abreast the site of the trader's house, there is a boat passage leading through the reefs.

Beacons, which are not reliable, mark a 273° range to the anchorage.

North Cape (2°33'S., 150°49'E.) is low and covered with coconut palms.

St. George's Channel

9.12 St. George's Channel (4°30'S., 152°30'E.) separates New Ireland from New Britain and leads into the Bismarck Sea. It is one of the major shipping lanes for a passage between Australia and Japan, through the Solomon Sea. The channel is deep and clear of apparent dangers in the fairway. The passage

is also used by vessels bound NW to the Caroline Islands and the Marianas Islands, and to **San Bernadino Strait** (13°00'N., 124°30'E.).

The channel is divided in two by the Duke of York Group in the N. From a position about 10 miles E of **Cape Gazelle** (4°19'S., 152°24'E.), the track leads N and NW to the vicinity of **Labur Bay** (3°39'S., 152°21'E.), passing through the narrowest part of Saint George's Channel between the Duke of York Group and the W coast of New Ireland. The passage appears deep and clear of dangers.

The Gazelle Peninsula, the E side of which forms the W side of St. George's Channel, consists of many mountain ranges. The principal of these are the Crater Peninsula and the Rembarr Range in the NE; the Gawit Range, the Raulei Range, the Karas Range, and other ranges in the NW; an unnamed range in the SE; and the Lakit Range in the SW. The peninsula is reported to be a poor radar target from 33 miles.

The 520m peak, 2.25 miles W of Adler Bay, which will be discussed in paragraph 9.16, is distinctive against the higher range inland.

Several prominent peaks are located in the NE part of Gazelle Peninsula, particularly on the Crater Peninsula. Prominent among them are Mount Wunakokor, 777m high and located 15 miles WSW of Cape Gazelle; the Mother (Mount Kombiu), an extinct volcano, 658m high, and located 13 miles NW of the same cape; South Daughter (Mount Turanguna), 482m high, and North Daughter (Mount Towanumbatir), 591m high, about 1.8 miles SSE and 3 miles NW, respectively of Mount Kombiu. The last three mountains are an imposing and picturesque group.

Mount Tauruvur, an active volcano, 230m high, is W of Mount Turanguna; there are still other active craters on the inner side of the peninsula.

Winds—Weather.—Thick weather is reported to be an usual occurrence in the vicinity of the Duke of York Group during heavy SE storms.

Tides—Currents.—Between the entrance of St. George's Channel and a position about 230 miles to the SSE, the current was found to be setting S at a rate of 1.5 knots.

A current has been observed in St. George's Channel setting NNW at a rate up to 2 or 3 knots. Northward of the channel, a NW set of about 1 knot has been observed.

A vessel has experienced a S current running at a rate of 2.5 knots when passing through this channel.

During the Southeast Trades, there is an eddy current setting S close off the E coast of New Britain. A strong current sets round Cape Archway into Wide Bay, W of it and skirting the shore, and then sets out at Cape Cormoran.

A reliable source has stated that during SE winds, a NNW set of 3 to 4 knots may be experienced in the narrows of St. George's Channel. The same source also stated that NW winds diminish the rate of the current, but never reverse it.

The prevailing current appears, near the Duke of York Group, to set S, but it is affected by the monsoons. After a strong SE breeze, the current will be found setting to the N, but if this is succeeded by calm or light breezes, the current resumes its S direction.

The currents are stronger on the E side than on the W side of the Duke of York Group. They sometimes attain a strength of 2 to 3 knots on the E side of the group.

A report states that currents up to 4 knots have been experienced in the Duke of York Group during the Southeast Monsoon.

A 1 knot current setting in a W direction has been experienced in Gazelle Channel, but it did not extend beyond the channel limits.

Caution.—The SW side of New Ireland is steep-to, with all coastal dangers within 1.75 miles of the shore. The E coast of the Gazelle Peninsula, forming the W side of St. George's Channel, is also steep-to.

The Duke of York Group

9.13 The Duke of York Group, which consists of 13 islands, is in the N part of St. George's Channel. Duke of York Island, irregular in shape, is the largest island of the group. Makada Island, at the NW end of the group, and Ulu Island, at the SW end, are the only others of any size. They are 139m and 77m high, respectively. All the islands, with the exception of Makada Island, are low, densely wooded, and partly cultivated.

There are four harbors in the group; Mioko Harbor and Kerawara Harbor are located at the S end, while Balanawang Harbor and Makada Harbor are located at the N end.

There are several mission stations in the group. The principal settlement is on Mioko Island.

Mioko Harbor (4°13'S., 152°27'E.), the best harbor in the group, is sheltered, easy to access, and has good holding ground. Mualim Island is in the entrance of the harbor. Mioko Island, Utuan Island, and Ulu Island form the S and SW sides of the harbor. Duke of York Island forms the N side of the harbor. Mission stations are situated on these islands.

Tides—Currents.—Springs rise 0.7m and neaps rise 0.5m in the harbor. Tidal currents attain a rate of 2 to 3 knots in the passages.

Depths—Limitations.—There are depths of 10.9 to 14.6m in the harbor. East Passage had depths of over 14.6m in the fairway, but vessels drawing 4.9m or more should navigate with caution; local knowledge is advised. Northwest Passage, NW of Mualim Island, is foul.

Anchorage.—Vessels can anchor, in 12.8m, sand, about 230m N of the flagstaff on the SW point of Mioko Island. Care must be taken to avoid several shoal patches in the N approach.

Vessels should approach East Passage with the SW extremity of Mualim Island bearing 321°. This course leads about 0.1 mile NE of a 2.4m patch 0.2 mile E of the E extremity of Mioko Island. When nearing Mualim Island, the course should be altered to pass within 0.1 mile of its SW end, so as to avoid a spit, with a depth of 4.6m, that extends NE of the NE side of Mioko Island.

When the E end of **Utuan Island** (4°13'S., 152°28'E.) bears about 230° and is open to the NW extremity of Mioko Island, the course should be altered to the W until the flagstaff standing on the N side of a house on the SW extremity of Mioko Island bears 191°. Then a 191° course leads to the anchorage. This latter course leads close E of a 9.7m shoal, 0.4 mile N by E of the flagstaff.

9.14 Balanuwang Harbor (Balanawang Harbor) (4°07'S., 152°28'E.), indenting the N end of Duke of York Island, is sheltered from all but N winds. Vessels can anchor, in 26m, about

0.2 mile from the head of the harbor. The anchorage is not recommended.

Kerawara Harbor, between Ulu Island on the N and Kera-wara Island and Kabakon Island on the S, provides a sheltered anchorage. The SE entrance, between Mioko Reef, extending 1.75 mile W from the W end of Mioko Island and the reef enclosing Kerawara Island, is narrow and unmarked. The harbor should be entered only by small vessels with local knowledge.

Foul Bay, entered between the N end of Ulu Island and Nakukuru Point, appears to offer sheltered anchorage from SE winds. Foul ground extends up to 1 mile off the shores of the bay, leaving a small area in its center with depths of 40 to 61m.

Makada Harbor, between the NW side of Duke of York Island and Makada Island, can be entered from the NW or SW. It is suitable only for small vessels with local knowledge and with favorable light. Mission stations are situated along the shores of the bay.

Tides—Currents.—Springs rise 0.9m and neaps rise 0.6m in Makada Harbor. The flood current runs about 7 hours to the N and the ebb 3.5 hours to the S at a rate of 1 knot to 3 knots. The tidal current sets strongly through the SW entrance.

The **Credner Islands** (4°16'S., 152°22'E.), located between the Duke of York Group and New Britain, are low and densely wooded. Each islet is surrounded by a reef, with deep water between.

St. George's Channel—East Side

9.15 Between Cape St. George and a point of land 5 miles S of Labur Bay, about 78 miles NNW, there are stretches of rocks, sand, and pebbles. The greater part of the coast is composed of cliffs and steep slopes rising directly from the water's edge. Inland from the low portions of the coast and backing the cliffs and steep slopes that rise directly from the water's edge are narrow terraces and belts of low hills. Farther inland are the steep slopes of the interior mountains. Coconut plantations and grass-covered areas are found scattered along the coast; elsewhere, the coasts and inland mountains are covered with dense rain forest.

Kambotorosch Harbor (4°49'S., 152°53'E.), entered about 1.8 miles N of Cape St. George, is protected from the North-west Monsoon by Lambom Island and Latau Island. Heavy gusts from the SE blow over the high land in the vicinity of the harbor. Small vessels can anchor, in 40 to 50m, with the E end of Lambom Island bearing 330° and the W entrance point of the harbor bearing 262°.

Gower Harbor, between Lambom Island and the coast, has depths of 68 to 95m in the fairway, but is too deep for anchoring.

Lassim Bay (Breton Harbor), entered about 1 mile N of Lambom Island, has two coves at its head, namely Lawanai Cove (English Cove) and Suir Cove (Irish Cove). The outer part of the harbor is deep, but the coves are suitable only for small craft with local knowledge.

Between the entrance of Lassim Bay (Breton Harbor) and Cape Waum, the coast is fringed by a narrow reef. The range of hills inland is about 610m high. A shoal bank, with a depth of 6.4m over its outer end, extends 0.4 mile SW from the S extremity of

the cape. Watarea Rock lies 0.3 mile W of the cape. A rock, with a depth of less than 1.8m, is close N of Watarea Rock.

Lamassa Bay, formed between the coast of New Ireland, on the E, and Lamassa Island and Ningin Island, on the W, has considerable depths. A shoal depth of 3.6m is about 0.3 mile N of Lamassa Island. Lamassa Island is 244m high. Ningin Island is between Lamassa Island and Cape Waum. A spit, with depths of 4.9m over its outer end, extends about 0.3 mile SE from the S end of Lamassa Island. A spit, with a depth of 4.9m, extends about 0.2 mile SE from the S extremity of Ningin Island. Port Sulphur, in the SE part of the bay, indents the NE side of Cape Waum. Sperber Point and Condor Point are 6 miles and 13 miles NW, respectively, of Cape Waum.

Anchorage.—Vessels can anchor off the NE side of Lamassa Island, about 0.1 mile offshore, in 55 to 64m. The best approach to this anchorage is S of Ningin Island. Small vessels can anchor in Port Sulphur.

Close S of Gilingil Point, anchorage is available, in 40m, about 0.2 mile offshore. This anchorage affords no shelter in any weather.

King Bay (4°24'S., 152°42'E.) is a slight indentation in the coast. King, a small village, is situated on the N shore of the bay. The King River discharges into the bay about 0.3 mile N of the village. Trees line the coast and there are palms in the vicinity of the village. Dangai Peak, E of the bay, is 778m high and prominent. Anchorage can be taken, in 39 to 48m, nearly midway between the village and the river mouth.

Between King Bay and Tambaker Point, the coast is fringed in many places by a reef that covers at HW. A bay indents the N side of Tambaker Point and has several small rivers flowing into it. A valley extends E from the head of the bay.

Between Huru Point and Cape Erkokon, about 16 miles ENE, there are many open bights. The mountain range, which rises to an elevation of 1,870m E of the former point, descends close to the coast along this stretch. Several mission stations are scattered along this coast.

St. George's Channel—West Side

9.16 The W side of St. George's Channel is formed by the E coast of the Gazelle Peninsula, which forms the NE part of New Britain. The Gazelle Peninsula has many mountain ranges.

Cape Archway (4°58'S., 152°15'E.) is formed by an archway of rocks projecting into the sea. Between the cape and Iltis Point, 19 miles NNE, the coast is backed by mountains attaining a height of about 1,174m.

Between Cape Archway and a position 18 miles S of Cape Gazelle, the coast is bordered by shores of rock, coral, and sand that alternate with cliffs and steep slopes. The coast is backed by narrow margins of low, undulating, and generally sparsely-forested terrain, inland of which are the steep densely-forested slopes of hills and mountains. In several places the margins of low ground are wide and are planted in coconut palms.

Between a position 18 miles S of Cape Gazelle to that of the cape, the shore is sandy in places. The sandy shores are interrupted by cliffs, which are the terminals of low ridges and isolated hills. Backing the sandy shores are areas of low, hilly, and

undulating terrain. The coast is developed and is interspersed with many plantations.

Eber Bay, a slight indentation in the coast, is located 6 miles NNE of Cape Archway and is suitable only for small craft. An 8m shoal is located in the middle of the bay, about 0.5 mile off the mouth of a small river.

Adler Bay is a small cove located about 4 miles NNE of Eber Bay. It is of little commercial importance. The coast in the vicinity of Adler Bay is said to be steep-to.

Iltis Point, a salient point lying about midway between Cape Archway and Cape Gazelle, has a shoal, as defined by the 9.1m curve, extending some distance offshore. Vessels should give the point a wide berth.

Induna Island lies close offshore, about 5 miles N of Iltis Point. The island has been reported to be only a group of boulders. Anchorage, which is sheltered, may be taken by small craft, in a depth of 31m, sand, between the shore and a steep-to reef extending S from Induna Island; the anchorage is best approached from the N. A stranded wreck lies just SE of the anchorage.

Rugen Harbor, about 2.3 miles NNW of the small islet, is a landlocked inlet suitable only for small craft with local knowledge. A sawmill is situated on the N side of the harbor. Anchorage may be obtained, in a depth of 11.9m, sheltered from wind and sea, inside the harbor. There are shoals, with depths of 1.2 and 2.4m, close S and W, respectively, of the anchorage. These shoals are marked by beacons.

Tamalili Anchorage, an indentation in the coast located about 2 miles S of Cape Gazelle, is open to E and S winds. A reef, with depths of 3 to 9.1m, fronts the shore at a distance of from 0.2 to 0.5 mile. Depths of 37 to 55m are found within the reef, but the area is confined and is suitable only for small craft with local knowledge.

9.17 Cape Gazelle (4°19'S., 152°24'E.), marked by a light on its N side, is the end of a long spur from Mount Wunakokor. The cape is 46 to 61m high.

Cape Wanata, about 1 mile SSE of Cape Gazelle, is also marked by a light.

Between Cape Gazelle and Raluana Point, the shore is mostly sandy and interrupted by cliffs. Areas of low, hilly, and undulating terrain back the sandy shores.

Kabakaul, a village, is situated about 4 miles WSW of Cape Gazelle. There is a small pier at the village. A reef, which dries in places, extends up to 0.1 mile offshore between the village and Lesson Point.

Kokopo Roadstead (4°20'S., 152°17'E.) ([World Port Index No. 56820](#)) is formed by a bight in the coast between Lesson Point and Raluana Point, 6.5 miles WNW. There are no off-lying dangers, but at a position about 3 miles W of Lesson Point, a reef extends 0.25 mile NE from the coast. Its outer extremity is marked by a pipe. Kokopo settlement stands amongst an extensive coconut plantation on the shore. The District Officer's house stands on the 78m hill SW of the settlement and about 0.3 mile inland. There are some trading stores, a post office, and small machine shops.

Depths—Limitations.—There is a mission station at Vunapope. Cement Wharf, near the mission, has 2.4m of water at its head, it is no longer in use (1969).

An L-shaped jetty is constructed at Vunapope Mission Station. The berthing face is 23m long, with an alongside depth of about 9m.

Anchorage.—Anchorage can be taken off Vunapope, in 46m, good holding ground, with Lesson Point and Mushroom Islet in line bearing 086°. Small vessels with local knowledge can anchor farther inshore, in 33m.

Caution.—A wreck lies alongside another jetty just E of the Cement Wharf

Blanche Bay is entered between Raluana Point and Praed Point. Raluana Point has a spit extending 0.25 mile seaward from it and a mission and trading station, with a small jetty, are 0.6 mile SE. Praed Point, at the foot of Mount Turunguna, has a mission village.

Karavia Bay indents the S shore and Matupi Harbor and Simpson Harbor indent the N shore of Blanche Bay. The N shore of the bay is overlooked by the three picturesque and magnificent mountain cones, with the rugged outline of two small volcanoes in the foreground. Mount Tavurvur is an active volcano.

There are several villages on the S shore with mission stations in most of them.

Approaches to Rabaul

9.18 Mackenzie Shoal, the outer danger, has a depth of 5.2m and is about 0.5 mile SW of Praed Point; it is marked by a light.

The shores of Karavia Bay are rather steep-to, with deep water up to 0.3 mile offshore.

Between Praed Point and Sulphur Point, the coast is reef-fringed to a distance of 0.1 mile. A 3.3m shoal is outside the fringing reef, about 0.4 mile ESE of Sulphur Point. A wreck is stranded on the fringing reef N of this shoal.

The entrance of Matupit Harbor (Matupi Harbor) is 0.75 mile wide, but the channel, with depths of 22 to 55m, is only 0.25 mile wide between the 10m curves. A spit, with depths of less than 1.8m, extends 0.3 mile SE from the SE side of Matupit Island (Matupi Island). A detached shoal, with a depth of less than 1.8m, is on the W side of the fairway, E of the island.

The shores of Simpson Harbor are mainly sand with an occasional narrow reef. There are no dangers except for Dawapia Rocks (Beehive Rocks) and the shoal E of them. Dawapia Rocks are two prominent sandstone rocks lying in the middle of the S part of the harbor, and they are marked by a lighted beacon about 0.1 mile East. They stand on the SE part of a reef, about 0.2 mile long and steep-to. These rocks are each about 90m long; the N rock is 60m high. A 1.8m shoal is 0.1 mile E of the rocks.

Caution.—It has been reported that Simpson Harbor is fouled with many wrecks, some of which are dangerous to navigation. Some of these wrecks may not be properly charted; further, depths and heights are based on datum that may be about 0.6m too low.

There is considerable pumice floating in the harbor, but it is not dangerous to navigation.

Volcanic action and seismic waves constitute potential dangers in the area.

Hot salt water springs and boiling steam may be seen in numerous places around the N and E shores of Matupi Harbor.

The gases in these springs give off a pungent odor. The floor of Matupi Harbor appears to be slowly rising due to volcanic action in the area, which is causing the land in the vicinity to tilt.

9.19 Karavia Bay indents the SW part of Blanche Bay, between Raluana Point and Vulcan Point. The latter point has 6.1m cliffs, backed by a wooded crater which rises to a height of 238m to the tree tops. The shores of Karavia Bay consist of a uniform range of hills rising steeply from the beach to a height of about 457m, about 0.8 mile S. The hills are wooded, except for some cleared areas. The beach is densely covered with coconut palms. The wreckage of several ships stranded on the shore are visible.

Albino Bay and Escape Bay are slight indentations in the N shore of Blanche Bay, between Praed Point and Sulphur Point. Both bays are backed by mountains, but there is some flat land between the mountains and the shore of Escape Bay.

Matupi Harbor is entered between Sulphur Point and Matupi Island. Matupi Island, 12.2m high, is joined by a causeway to the SW end of the Crater Peninsula. There are two mission stations on the island. It was reported that a prominent red and white radio tower stands about 0.3 mile NE of the charted church at Malaguna.

Simpson Harbor, on whose shores the port of Rabaul is situated, indents the NW portion of Blanche Bay. A government building and a hospital stand on Namanula Hill, E of the town. Missions are situated on the W side of the harbor.

Sulphur Creek indents the E shore just S of Rabaul. A hot spring is located on the N side of its entrance. The water in the creek is hot and salty. The airport, reported destroyed in 1997, is situated S of the creek.

Anchorage.—Karavia Bay is too deep for anchorage; however, temporary anchorage can be taken, in 18.3 to 26m, sand and coral, W of Raluana Point. Some protection is afforded from SE winds and swells.

Matupi Harbor offers protection from all but S winds. Vessels can anchor, in 10.9 to 37m, off the NE side of Matupi Island.

Rabaul (4°12'S., 152°11'E.)

[World Port Index No. 56810](#)

9.20 Rabaul, on the E side of the N end of Simpson Harbor, is the administrative center and port of entry for New Britain.

Winds—Weather.—The Southeast Trades usually commence in May, freshen considerably in July, August, and September, and then gradually subside. The wind increases during the forenoon and blows with great regularity until 1 or 2 hours before sunset, when, after an interval of calm, there is usually a land breeze. This is called the dry season, but in this case it only means that less rain falls than during the Northwest Monsoon. Dry weather for 2 or 3 weeks is exceptional.

The Northwest Monsoon starts in December and usually continues to the end of March. Calms and light airs, with usually very little rain, prevail between the seasons. The calm seasons are very sultry and oppressive. The Northwest Monsoon comes in as a strong squall, with the wind approaching a moderate gale force and blowing for days without ceasing, while

very heavy rains fall continuously. Between these periods the weather is good, though frequently cloudy, and there also are many days of bright sunshine. The nights are rendered pleasant at nearly all seasons by the land breeze.

Day temperatures range from 30° to 33°C; night temperatures range from 24° to 25°C. The maximum temperature is 36°C, occurring quite frequently; the minimum is about 17°C. Abrupt variations hardly ever occur.

Tides—Currents.—The mean tidal rise at Rabaul is 0.4m, while the spring range is 0.6m. Little current is found in Blanche Bay.

Depths—Limitations.—Dawapia Rocks, two remarkable rocks located on the SE side of a steep-to rocky patch, lie in the entrance to Simpson Harbor. A beacon marks another patch, 0.1 mile ESE of the rocks.

Four wharves exist on the N shore of Simpson Harbor. Bay Road Wharf, the W facility, is 152m in length, with alongside depths of 8m. A small craft wharf, with a depth of 2.7m alongside, stands close E of Bay Road Wharf. Blanche Street Wharf, 0.1 mile E of Bay Road Wharf, is 122m long, with an alongside depth of 8m. Kamaki Wharf, a converted wreck situated close E of Blanche Street Wharf, and a small craft wharf further E, have been reported to be disused (1982). Copra Products Wharf, 0.75 mile SW of Blanche Street Wharf, provides a berth 85m in length, with alongside depths of 6.4m. Several other wharves are situated about the harbor, with alongside depths of 1.8 to 3.9m. Tank vessels are handled at Blanche Street Wharf.

Aspect.—The port area is surrounded by a high fence.

Pilotage.—Pilotage is compulsory and should be ordered at least 12 hours in advance, confirming 4 to 5 hours before arrival. Pilotage is available 24 hours, and may be obtained from a blue-hulled vessel 1 mile SE of the light shown S of Matupi Island.

Regulations.—See Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia for regulations pertaining to vessels within the waters of Papua New Guinea. The local authorities should be consulted for information on harbor regulations.

Signals.—Rabaul Radio (P2R) is a full service radio communications facility manned 24 hours. Both the pilot and the local authorities may be contacted through this station.

The pilot station may be contacted on VHF channels 6, 8, 12, and 16, from 0600 to 2145, or when a vessel is expected.

Anchorage.—Anchorage is prohibited within 0.1 mile of the range line and within the Prohibited Anchorage area, best seen on the chart. The Quarantine Anchorage stands off the harbor's head, and may best be seen on the chart.

The passenger ship anchorage, about 0.6 mile SSE of the front range light, has a depth of 20m and is best seen on the chart.

Directions.—The fairway from Cape Gazelle to Simpson Harbor is wide, deep, and marked by lights and a lighted range. Additionally, vessels have reported that visual and radar navigation was excellent.

Vessels bound for Matupi Harbor should alter course to 349° when the W edge of Rabalanakaia Crater bears 349°, and steer through the entrance on that course. When the center of Mount Tavurvur bears 096°, vessels can alter the course W for the anchorage.

Caution.—Vessels have reported that the pilot recommends remaining to the W of the range line when entering Simpson Harbor to avoid silting which has occurred on the port's E shore. Vessels have also advised berthing between daybreak and 0800 to avoid the NW winds which set off the wharves.

Major volcanic activity occurred in the port area in 1994.

9.21 Between Praed Point and Cape Tawui (Cape Tavui) are narrow sandy shores, fringed by a reef and by shoal depths out to 0.5 mile in places. The shores are backed in places by narrow strips of flat and gently sloping terrain. Cliffs and steep slopes rise to high hills and low mountains just inland of the marginal coast.

Mount Kombiu is the dominant feature of this stretch of coast, which has several villages and mission stations. It was reported that a prominent microwave antenna stands at the peak of Mount Kombiu.

Cape Tawui (Cape Tavui), marked by a light, is the termination of a low spur of the coastal range of hills and is the N extremity of New Britain.

Between a point about 5 miles S of **Labur Bay** (3°41'S., 152°22'E.) and Komalu Bay, about 20 miles NW, the coast is bordered by low cliffs that rise to narrow terraces and steep sloping hills. Backing the hills and terraces are the steep forested slopes of a low mountain ridge that rises from the low pass SE of Labur Bay and slopes to a pass about 152m high located inland of Komalu Bay.

Between Labur Bay and Cape Strauch, a wooded tongue of land about 28 miles NW, there are many small inlets, villages, and small coconut plantations.

Between Komalu Bay and Katherine Harbor, about 45 miles NW, the greater part of the coast is bordered by sandy shores. In places, particularly along the SE part of the coast, cliffs rise close inland from the shore. A narrow plain extends NW along the coast. This plain is backed by the steep slopes of a high limestone plateau. The SE side of the plateau rises from the low pass located inland of Komalu Bay. The plateau, with an elevation of 1,480m, slopes to a pass about 610m high that is located inland of Katherine Harbor. Much of the coast and the inland plateau is densely forested, but there are several coconut plantations.

Kalili Harbor, SE of Cape Strauch, is a small reef enclosed bay. Pana Island, small and wooded, is close off the SE entrance point of the bay. The passage into the bay requires local knowledge and favorable light conditions to negotiate the 70m wide entrance. The anchorage in the bay is approached on course 050°, with two white beacons in line, and entering between two reefs, each marked by a pole. When between the poles, course is altered NNW in line on a second set of white beacons. Then steer between the reefs in the harbor as required. The anchorage stands in the center of the harbor, in depths of 13m to 22m.

9.22 Katherine Harbor (3°12'S., 151°39'E.) is a small indentation in the coast bordered by a fringing reef. It is about 0.2 mile long and can be identified by two wooded rocky islets which lie S of it. Katherine Harbor serves as a good radar target from 29 miles. Small vessels with local knowledge can take anchorage, in 50m, in the harbor, midway between the reefs on either side. The anchorage is open to the SW. Small streams

discharge into the harbor. A large village is situated NNW of the harbor.

Between Katherine Harbor and a position abreast Dyaul Island, there are a few sandy stretches, but the coast is cliffy and steep. The steep slopes rise to narrow terraces backed by mountain slopes. The mountains increase in height from the high pass located inland of Katherine Harbor. The NW slopes of the mountains grade downward to a height of about 153m. Swift mountain streams that flow only during the wet season have cut deep ravines in the coast and the lower mountain slopes. The coast and inland mountains are densely forested, except for several coconut plantations near the shore.

Latangai Island (2°54'S., 151°09'E.) is connected with New Ireland by a reef, the S side of which is steep-to.

Dyaul Island is separated from the NW end of New Ireland by Gazelle Channel. Mount Bendemann, 226m high and prominent, is located in the N central part of the island. The remainder of the island has an average height of about 61m. Anchorage for small craft can only be obtained in the harbors, because the fringing reef is steep-to and caution is required because the indentations are encumbered with reefs.

The island is fringed by reefs, narrow at the E end, but extending up to 1.5 miles off the W end.

Mait Island stands on the reef that is separated from the W end of Dyaul Island by the narrow Mait Channel. The latter is foul, especially in the S part, and is only navigable by boats, and it is even dangerous for them. There are several boulders, above-water, scattered over the reef fringing the island. The reef has been reported as extending farther SW than charted. There are coconut and breadfruit trees at the N end of Mait Island. A light marks the S point of Mait Island.

Gazelle Channel, separating Dyaul Island from New Ireland, appears to be deep and free of dangers, except for coastal reefs. The S entrance is between Latangai Island and the E end of Dyaul Island. The W entrance is marked by Dietert Peak, 230m high, on the N side, and Mount Bendemann on the S side.

A W current, with a rate of about 1 knot, has been experienced in the channel, but it did not extend beyond the limits of the channel on the coast of New Ireland.

There are several small boat harbors along the part of the N Ireland coast that forms the N part of the channel.

New Ireland—Northwest Coast

9.23 North Cape (2°33'S., 150°49'E.), marked by a light, is low and covered with coconut palms. The coast SE of the cape has been previously described in [paragraph 9.9](#).

The NW coast of New Ireland, between its NW point and North Cape, is composed of two peninsulas, between which lies Balgai Bay. Mud and sand borders the NW side of the SW peninsula and gives place to mangrove that extends around the bay. The mangrove is backed by low hills with swamps in many of the low depressions between them. The swampy area around Balgai Bay is the largest area of swamp on New Ireland.

Sandy shores are found along the NW end of the NE peninsula. Backing the sandy shore along the SW end of that peninsula is a broad area of low ground that gives place NW to a strip of low ground, about 91m wide, that is backed by a grassy ridge. The ridge is about 9.1m high, but in places it is almost

12.2m high and steep. Kavieng, the most important settlement on New Ireland, is situated close inland of the ridge.

The islands and islets lying between New Ireland and New Hanover are generally low and flat. Around the islands are reef-fringed stretches of sand that alternate with extensive areas of swamps and bordering mangrove. Some of the smaller islands and islets are almost barren, but most of them are wooded. Coconut plantations are found on the larger islands.

New Hanover is hilly and mountainous, with a maximum height of 875m located near the middle of the SW side of the island. The mountains decrease in height toward the S coast. The island slopes down sharply in the N to a flat plain. Mount Suilaua, about 3 miles S of the summit, is a sharp volcanic cone with a serrated peak, 566m high. Mount Deimling, 650m high and prominent, is about 9.3 miles ENE of Mount Suilaua. The mountain ridge divides toward the center of the island. The W extremity of New Hanover slopes up to Mount Pavialamis, 7.5 miles E. The peaks of the island are usually covered with cloud or haze.

Between the E coast of New Hanover and the NW end of New Ireland, there are many islands, reefs, and shoals. Two navigable and deep passages, Steffen Strait and Byron Strait, lead through these dangers. The former is the more important, as channels connect it with Kavieng Harbor.

The S and SW coasts of New Hanover are fringed by reefs, but seldom beyond a distance of 0.5 mile. The NW coast of the island is fringed with a reef to about 3 miles offshore. Many coral islets are on the reef.

A barrier reef is off the NE coast of New Hanover and extends in a SE direction to the entrance of Byron Strait. Several islands are on this reef.

Off-lying Islands and Dangers

9.24 Tingwon Group, 15 miles WSW of New Hanover, are three low wooded islets on the E part of a narrow reef which is apparently steep-to. The islets, composed of coral, limestone, and sand, are quite flat, but some have low dune-like ridges. Coconut palms are found on all the islets, and at the N end of Tingwon Island there is a thin forest and a small native village. A small craft anchorage is in a small cove about 1.5 mile WNW of the S point of Beligila Islet.

Caution.—It has been reported (1993) that the Tingwon Group lies 2 miles W of its charted position.

Tench Island (1°38'S., 150°43'E.) is 0.5 mile long, oval-shaped, and prominent from offshore. The W part of the island is densely wooded. Reefs extend up to 0.2 mile offshore, except for one place on the W side.

Emirau Island (1°38'S., 150°00'E.) is deeply indented and has some densely-wooded hills, about 37m high, on its N part. It is about 47 miles N of the W end of New Hanover. When seen from NW, it appears saddle-shaped towards its N end. There are stretches of sand around the island, but considerable parts of the island, particularly the NE coast, are composed of cliffs that rise from the water's edge or close inland from the shore. On the S part of the islands are stretches of mangrove and areas of swamp. There are several coconut plantations on the S part of the island. An air facility is situated near the middle of the N coast of the island.

Winds—Weather.—The Northwest Monsoon lasts from December through March. It is a season of sudden squalls, with calm weather in between. During the Southeast Monsoon (May to September), there is a steady continuous blow, with sudden squalls. Some very heavy storms from the SW occur during the doldrums, between seasons, which sometimes are a 4 or 6 weeks late or early. Average surface wind velocities are 5 to 6 knots during the afternoons. Land and sea breeze effects are negligible.

The heaviest rain occurs during the Northwest Monsoon. A maximum of 485mm per month occurs during July and August.

Tides—Currents.—Tides are irregular, but mostly of a diurnal nature. Springs rise 0.9m and neaps rise 0.3m.

Currents in the vicinity of Emirau Island set with the prevailing wind and are not strong. There are tide rips off the SW end of the island.

Depths—Limitations.—Emirau Island is fringed by a shelf of coral reef which, along the S and SW coasts, is surmounted by small islands and islets. Outside the fringing reef are several small shoal patches. The outer danger, a 9.1m shoal, is about 5.5 miles W of the SW end of the island. The shoal has a diameter of 320m. A shoal tongue, as defined by the 20m curve, extends 2 miles NW from Cape Tietgens.

A 5.5m shoal was reported about 1.5 miles NW of the N end of the island.

A 1.8m shoal, about 0.2 mile long, is about 0.5 mile E of the S end of the island.

A shoal area, about 0.3 mile long and having depths of 7.3 to 12.8m, is located about 1 mile N of the E end of the island.

Caution.—Emirau Island has been reported (1996) to lie 3 miles SW of its charted position.

9.25 Hamburg Bay (1°38'S., 149°58'E.) ([World Port Index No. 56740](#)) indents the N side of Emirau Island. The bay is 3 miles wide, between Cape Ballin and Cape Tietgens, the NW end of the island, and indents the coast to a distance of 2 miles. Two coral fingers extend into the bay from the fringing reef.

Tides—Currents.—A fresh SW wind sometimes causes a current to set through the harbor at a rate of 2 knots.

Depths—Limitations.—There are two piers in the harbor, one of which has a depth of 9.1m and can accommodate a vessel up to 107m long.

Anchorage.—Anchorage can be taken by small vessels with local knowledge, in 16 to 18m, near the head of the bay.

Eulolou Harbor is at the SE end of **Emirau Island** (1°40'S., 150°00'E.), between that island and Elomusau, a small islet located SE of the E end of the larger island. The entrance is from the S, passing W of a shoal. There is a shoal at the N end of the harbor and another in the middle of the fairway at the S end.

Anchorage.—Small vessels with local knowledge can anchor, in 11 to 15m, in the harbor, but the swinging room is limited. It was reported that the E end of Eutitui Islet, bearing 026° and just open of the E point of Emirau Island, leads to the anchorage.

In addition to the anchorages in the various harbors, vessels can anchor outside the Eulolou Harbor entrance in the open roadstead, where some shelter is afforded during the Northwest Monsoon.

Vessels can take open anchorage off the S side of Emirau Island, between the S extremity of the island and the W extremity. The coastal reef is steep-to, but some protection is afforded from NE winds.

9.26 Mussau Island (1°30'S., 149°46'E.) is about 57 miles NNW of New Hanover. It is composed of terraces and folded ridges that rise to a peak about 651m high near its mid-part. The terraces rise very steeply in some places in steps of 91 to 305m, but the terrace surfaces are mainly ranges of small hills. On an E bearing, Mussau Island appears wedge-shaped, with the steeper side of the wedge being to the S.

Sandy shores extend around the coast, but a considerable part of the island is ringed by high cliffs that rise at varying distances inland from the shore. The island is covered with rain forest, interspersed with areas of light scrub and grass. Coconut plantations and villages are found along the E and S sides of the island.

A trading station is situated on Ekaleu Islet, 6 miles W of the S end of Mussau Island.

Tides—Currents.—A strong W or NW set is frequently encountered in Melle Channel. Between Mussau Island and Emirau Island a similar current is often met.

The current sets WNW at a rate of 1 knot between New Hanover and Mussau Island.

Depths—Limitations.—Melle Channel, the passage between the reefs, was reported to be clear of dangers, except for Pieho Reef. It should, however, only be used by small vessels with local knowledge.

Anchorage.—A vessel has anchored, in 35m, to the SE of the trading station on Ekaleu Islet.

A sheltered anchorage can be taken, in 16m, in the entrance of Elueke Bight, about 3 miles S of the N end of the island. The N end of Mussau Island, bearing 001°, and the mouth of the N stream emptying into the bight bearing 122°, serve as anchor bearings.

Caution.—Mussau Island is fringed by a reef that broadens to a width of 2 miles along the S coast.

Mussau Island has been reported (1985) to lie 2 miles SW of its charted position.

Several small islets stand on the reef fringing the S coast of the island. South of the reef and separated from it by a narrow deep passage, known as Melle Channel, is an atoll on which lie several small islets. Pieho Reef, visible even in a heavy sea, is located at the E entrance of the channel, about 1.3 miles S of the S end of Mussau Island.

Kavieng Harbor—Approaches

9.27 Steffen Strait, deep and clear in the fairway, is entered from the S between the W end of Baudisson Island (Binnegem Island) and Selapiu Island. The strait leads in a N direction to its intersection with Nusa Channel. Baudisson Island, separated from New Ireland by Albatross Channel, has several villages on it. Cape Jeschke, the W end of Baudisson Island, is fringed by a reef which is steep-to and has several drying rocks on it.

A chain of islands extends N from the NW end of Baudisson Island and forms the E side of Steffen Strait. This group

consists of Kulinus Island (Kulaumis Island), Nonowau Island (Nanavaul Island), Wadei Island (Vutte Island), Nusaum Island, and Lemus Island; there are many reef-fringed islands E of the above-named islands. The W side of Steffen Strait is formed by Selapiu Island, Ribnitz Island, and Bangatang Island.

All of the above islands are tree-covered and are more than 30m high; Selapiu Island, the highest, is 127m high.

Tides—Currents.—Tidal currents in Steffen Strait attain a rate of 2 knots, setting N on the flood, and S on the ebb.

Depths—Limitations.—Steffen Strait has depths of more than 18.3m in the fairway. A shoal, with depths of less than 1.8m, is 2 miles E of the S end of Selapiu Island. A 7.3m shoal is E of this last shoal, about 1 mile SW of Cape Jeschke. A 3.6m shoal is N of the same shoal, about 1 mile SW of Cape Jeschke. A 4.9m shoal lies about 0.7 mile WSW of Cape Jeschke. A bank, with a least depth of 18.9m, has been reported about 1.3 miles WNW of the SW end of Baudisson Island.

Albatross Channel, separating New Ireland and Manne Island, has depths of as little as 2.1m.

Kulinus Passage (Kulaunus Channel), separating Kulinus Island and Nonowaul Island, and connecting Steffen Strait with Silver Sound, is deep in the fairway, but has a 7m shoal in mid-channel, about 0.5 mile NE of the N end of Kulinus Island; the fairway is between this shoal and Kulinus Island.

Lisseno Number 1 Island, 45m high, is at the E end of the sound. Foul ground, with a depth of 1.5m near its end, extends about 0.6 mile WNW from the islet. Several shoals, with depths of 3.9 to 5.5m, are within 0.5 mile WSW of the islet. A patch, with a depth of 2.4m, is 0.5 mile N of the leading line, about 1.5 miles W of the islet. A 5.5m shoal is nearly 1 mile WNW of the islet.

Nusa Channel, deep and clear in the fairway, connects Steffen Strait with Kavieng Harbor. Wadei Island, Ungan Island, Kabotteron Island, Eruk Islands, and Usien Island (Nausen Island) form the S side of the channel. A number of reefs and shoals are near and between the islands on the S side of the channel.

Lemus Island, Nusaum Island, Nusalomon Island, and Edmago Island form the N side of the channel. These islands are all fringed with reefs.

Aspect.—A light shown from the SE end of the reef off the E side of Selapiu Island marks the S entrance to Steffen Strait. Range beacons, marking a 055.5° range, are situated on the W side of the reef extending W from Kulinus Island and on the N side of the same island. Range lights, in line bearing 081°, mark Nusa Channel.

Anchorage.—Protected anchorage can be found in suitable depths on Silver Sound.

Directions.—Albatross Channel should only be used by small vessels up to 61m long, with local knowledge, because the dangers are unmarked.

Vessels approaching Steffen Strait from the S should pass inside of Dyaul Island, keeping over to the New Ireland side. Large vessels should proceed toward the bluff, steep-to, and densely wooded S end of Selapiu Island. The island can be readily identified by Mausoleum Berg, 124m high and flat, 2.75 miles NNW of its S end. Vessels should steer to pass about 0.5 mile E of the S end of the island. The 053.5° range situated on Kulinus Island and the reef to its W leads between

the reef E of Selapiu Island and a 4.9m shoal. Strong rips occur near the S end of the reef E of Selapiu Island. When the W end of Lemus Island bears 001°, steer on that course for it. If proceeding for Nusa Channel, round the N end of Wadei Island (Vutte Island), so as to pass in mid-channel between that island and Nusaum Island, then steer a course with the S end of Edmago Island bearing 075°. When the light shown from Cape Siwusat (Cape Sveusat) bears 081°, steer for it on that bearing. When the beacons standing N of the wharf at Kavieng are in line bearing 034°39', steer for them.

Vessels approaching Steffen Strait from the N should enter the Strait by passing between Bangatang Island and Lemus Island; then round the S end of Lemus Island and proceed as directed in the S approach. Passage between any of the islands forming the N side of Nusa Channel is not recommended.

Vessels may also enter Kavieng Harbor via Silver Sound, which is less desirable than via Nusa Channel. Enter Steffen Channel either from the S or N as directed above. When Kulinus Passage (Kulaumus Channel) opens, alter course to pass between Nonowaul Island (Nanavaul Island) and Kulinus Island (Kulaumis Island). The N end of Lisseno Number 1 Island, in line bearing 072° with the N side of Usienlik Island (Usseinlik Island), leads through Silver Sound. Usienlik Island is 25m high and is 2.5 miles ENE of Lisseno Number 1 Island. Care must be exercised to avoid the charted shoal spots close to this islet. When the E end of **Schneider Island** (2°38'S., 150°43'E.) bears 010°, course should be altered to that bearing until the 116m summit just N of Mausoleum Berg is in line with the S end of Kabottern Island on a bearing 260°. Then bring this bearing astern. When well-passed Globig Island, steer to pass between Globig Island and Usien Island (Nausen Island), taking care to avoid all charted shoal spots; then steer in on the courses previously given for Nusa Channel and Kavieng Harbor.

9.28 Kavieng Harbor (2°35'S., 150°48'E.) ([World Port Index No. 56760](#)), the administrative center for the New Ireland District, is the port of entry for that district. It is also the principal port in New Ireland. Copra is the principal export. Cargo is worked by ships gear.

Winds—Weather.—Winds are generally from the NW.

Tides—Currents.—Tidal currents in the harbor are strong; the ebb sets S and the flood N. The rate is generally about 2 knots, but up to 6 knots have been reported.

Depths—Limitations.—Nusa Channel has a width of about 0.3 mile between the 10.9m curves at its NE intersection with Kavieng Harbor. Vessels with drafts up to 9.1m can enter the harbor through this channel. The fairway has depths of 18.3m or more.

Nissel Passage and North Entrance are limited to small craft with local knowledge.

The wharf, situated on the E side of the harbor, provides a berth 94m in length, with alongside depths of 7m.

Kavieng Harbor is formed between the NE end of New Ireland and Nago Island, Nusalik Island, and Nusa Island, which stand on an extensive reef.

Pilotage.—Pilots are available from Rabaul upon advance request. There are no tugs available.

Anchorage.—Anchorage is available, in a depth 20m, sand, with East Reef Light bearing 042°, distant about 0.4 mile.

Anchorage is also available, in 14.6 or 16.4m, N of Lisseno Number 1 Island and in Silver Sound, discussed previously in paragraph 9.27.

The quarantine anchorage is situated 0.75 mile SSW of the wharf, and may best be seen on the chart.

Caution.—A submarine cable extends from the SE end of Nago Island NE across Nusa Channel; anchorage is prohibited in the vicinity of this cable.

Moritz Rock, 2.7m high and about 0.5 mile WSW of the SW end of Patio Island, is on a narrow reef which extends almost 1 mile WSW of that island. An 8.2m shoal is about 0.5 mile SW of Moritz Rock.

Alexander Passage is clear and has depths of 21.9 to 25.6m in the fairway.

Senta Pass, between Patio Island and Tsoilaunung Island (Tsoi Launung Island), is suitable only for small craft with local knowledge, because its inner part is foul.

9.29 Byron Strait, with depths of 20.1 to 31.1m in the fairway, is an alternate main channel through the cluster of islands and reefs W of the W end of New Ireland. It passes between Selapiu Island and Kawang Island and an unnamed island immediately NE of Kawang Island on the E, and Patio Island, Nubils Island (Nub Island), and many small islands and reefs SW of Nubils Island on the West. Patio Island and Nubils Island are densely wooded. The S part of the strait is only 0.25 mile wide and is bordered by reefs on either side, which converge at the S entrance, reducing the width of the channel with moderate depths to 366m, and of the channel with over 10.1m to 183m. The N part of the strait is wide and deep between the fringing reefs. A shoal depth of 7.3m is about 5.8 miles NNW of the N extremity of Kawang Island.

Byron Strait should only be used under favorable light conditions, as the fairway has a width of about 0.1 mile at its S entrance. Tidal currents in the strait set NE on the flood and SW on the ebb, attaining rates of 2 knots.

Planet Channel, Chamisso Channel, and Mascot Channel (Mascotte Channel), W of Byron Strait, are subsidiary entrances to the inner waters. They connect with Alexander Passage and Ysabel Passage and should be used only by small vessels with local knowledge.

Alexander Passage (Alexandra Pass) is the main entrance from the S to Ysabel Passage and to the waters inside the barrier reef on the E side of New Hanover. The pass is entered from about the middle of Byron Strait through a 0.75 mile wide gap in the barrier between Nubils Island and Patio Island.

Entering through the S entrance, bring the S point of Utokol Island (Utukul Island) to bear 008° and steer for it on that bearing. Caution is necessary because the greater depths are found on the E side of the entrance. Then, when inside the entrance, vessels should then keep more to the W side of the strait where the reef is steep-to and more easily seen. The reef on the E side slopes gradually and detached rocks are off of it.

Anchorage.—Anchorage can be taken in the S part of Byron Strait, or in the wider part of Alexander Passage, in depths of 26 to 29m. The Byron Strait anchorage is exposed to S winds.

New Hanover

9.30 New Hanover (Lavongai Island) is separated from the NW end of New Ireland by a group of islands on either side of Steffen and Bryon Straits.

The S coast appears to be fringed with a reef which is steep-to; there are no known offshore dangers.

Metanas Harbor (Metanus Harbor), 11 miles W of the S entrance of Byron Strait, is small, but sheltered. The depths range from 29 to 42m; there is anchorage space for three vessels up to 79m long. Larger vessels must moor. Bat-Tam Island, forming the E side of the entrance, is prominent because of its tortoise-like shape. Only vessels with local knowledge should attempt entry; they should pass close off the island when entering.

Lobungai Harbor (Lavongai Harbor), a small cove, is 4 miles W of Metanas Harbor. A mission station, with a large church and a coconut plantation, is on the shores of the harbor.

Cape Botiangim (2°41'S., 150°11'E.) is rounded and wooded. It is reported to be a poor radar target from 20 miles. Baongung Harbor (Baungung Harbor), a small bay 8 miles NW of the cape, is open to the SW. A river discharges into the N part of the bay. A native village, marked by surrounding cultivated land, is on the E shore of the bay near its head. Vessels with local knowledge can anchor, in 37 to 55m, near the village.

Cape Matanalem, the W end of New Hanover, is low and apparently a coral formation. West Harbor is suitable only for small craft with local knowledge.

A barrier reef with many islets is off the NE coast of New Hanover and extends to Byron Strait, which has been previously discussed in [paragraph 9.29](#). Nemto Island, 6.3 miles E of the N extremity of New Hanover, is at the W end of the barrier reef, and Patio Island is at the S end. A conspicuous stranded wreck is reported 1 mile E of Nemto Island.

Ysabel Passage, between the NE and E coasts of New Hanover and the barrier reef, is sheltered throughout and provides an inner passage for small vessels with local knowledge. The S part of the pass is foul and should only be attempted under favorable conditions of light. Depths of 8.7 to 22m are found along the recommended track.

The best entrance from the S is through Byron Strait and Alexandra Pass. The channels W of Byron Strait are suitable only for small vessels with local knowledge. These channels have been previously discussed in [paragraph 9.29](#).

The best entrance from the NW is between Nemto Island and New Hanover. This entrance is 3.5 miles wide and deep in the fairway, except for a 6.4m shoal about 3 miles NW of Nemto Island.

Northeast Passage (Northeast Pass), with a depth of 7.6m, is the fairway and 1 mile wide, 5 miles SE of Nemto Island; the sea is reported to break in this passage.

Middle Reef is about mid-channel in Ysabel Passage, just E of the junction with Northeast Passage..

Anchorage.—Vessels can anchor in convenient depths in the wide NW part, or in the clear area of the S part, of Ysabel Passage. A vessel has anchored E of Cape Entrance, near Ungalik Island, 2.75 miles ESE of the cape, with the extremities of that island bearing 079° and 112°, and Nemto Island bearing 062°, distant 2 miles.

The NW coast of New Hanover, between **Cape Entrance** (2°21'S., 150°13'E.) and Cape Matanalem, has a belt of low land extending to the foot of the hills. Several low islands stand on the barrier reef, which is apparently steep-to and is up to 3 miles offshore. Navigation between these islands and New Hanover is limited to small vessels with local knowledge.

New Britain

9.31 New Britain is a large crescent-shaped island between the S part of New Ireland and the NE coast of New Guinea. The Gazelle Peninsula, the NE part of the island, is mountainous and is the scene of volcanic action. The aspect of this peninsula has been previously described in [paragraph 9.12](#). A high and very rugged range of mountains extends through the length of the island. Mount Uluwun, the highest peak and an active volcano, 2,300m high, is about 53 miles SSW of the NW point of the Gazelle Peninsula.

New Britain is covered with virgin forest; even the volcanoes are mostly covered to their summits. There are a number of fairly large rivers and some protected harbors.

New Britain—South Coast

9.32 The S coast has some swamps, but in most places sandy shores alternate with cliffs and steep slopes. Inland of the sandy shores and backing some of the cliffs are strips of low, undulating, and hilly terrain, narrow in most places, but extending considerable distances inland near the W end of the island.

The S coast is hilly and has a series of raised coral terraces, the highest of which are found along the SE half of the coast. Here the highest of several terraces rise to a height of 457m. Cliffs, with an average height of 61m, are found along the SW part of the S coast, between Cape Merkus and extending almost to Cape Bali.

The S part of New Britain has a uniform skyline which becomes more elevated toward the NE, except for the S peak in a volcanic cluster near the W end of the island.

Dampier Strait is about 13 miles wide between the W end of New Britain and Umboi Island. The latter is volcanic, mountainous, and rises to a height of 457m. The E side of the strait is steep and rugged. It is backed by mountains that attain a height of nearly 1,829m.

9.33 The S coast of New Britain is mostly steep-to. Between **Cape Archway** (4°58'S., 152°15'E.) and Cape Merkus, the coast is apparently free from dangers beyond a distance of 3 miles. The remainder of the S coast of New Britain is fronted by reefs, shoals, and reported dangers to a distance up to 20 miles.

Dampier Strait has a swept channel with a depth of 18.3m leading through the dangers. Its S approach is obstructed by a number of dangers, separated by deep-water passages which may be navigated with the sun in favorable position.

Vitiaz Strait, which is described in Pub. 164, Sailing Directions (Enroute) New Guinea, should be used in preference to Dampier Strait.

The **Arawe Islands** (6°06'S., 148°58'E.) front the coast of New Britain for a distance of 15 miles NW of Cape Merkus. They extend up to 7.5 miles offshore, and the navigation

amongst them is very intricate. Kaptimati Island (Kauptimete Island) is the outermost islet; it is located 5 miles W of Cape Merkus and is reported to be a good radar target from 21 miles.

Caution.—The S coast of New Britain has not been completely surveyed; there may be dangers in addition to the numerous charted ones.

Breakers have been reported about 20 miles W of **Bowen Shoal** (6°05'S., 148°40'E.).

Visibility is greatly reduced along the S coast of New Britain during SE storms.

9.34 Cape Archway (4°58'S., 152°15'E.) has been previously described in [paragraph 9.16](#) as a part of St. George's Channel.

Wide Bay, between Cape Archway and Cape Cormoran, is clear and deep. Cape Cormoran is high, vertical, and cliffy.

Jammer Bay, entered 4.5 miles W of Cape Archway, affords anchorage, in 11 to 16.5m, on a ledge at the head of the bay. This ledge falls off steeply to 55m. The anchorage is open to all but NW winds.

Henry Reid Bay (5°00'S., 152°00'E.), at the head of Wide Bay, is about 4 miles wide between Zungen Point and South Point. Zungen Point is about 13.5 miles W of Cape Archway. The shore is mostly reef free; where reefs do exist they do not extend more than 55m from the shore. The N shore of the bay is intersected by the mouths of two small rivers and is low and densely wooded.

Brown Island is close to shore, about 1 mile NW of South Point. A 5m shoal is 1 mile NE of the island, and on the N edge of this shoal is a rock, awash. A line of sunken rocks is about 0.2 mile SE of the island.

Anchorage can be taken, in 27.4m, with Zungen Point bearing 153°, distant 0.5 mile.

Between Cape Cormoran and Cape Orford, the coast is backed by a volcano and a mountain range. The latter cape is high and prominent. Between this cape and Cape Kwoi, 18 miles WSW, the coast is high, steep, and densely wooded. Kway Peak, about 549m high and about 7 miles NW of Cape Kwoi, is a prominent isolated mountain. It appears conical in shape when viewed from the E.

A light is shown in the vicinity of Cape Orford.

Jacquinot Bay is entered between Cape Jacquinot, about 12 miles W of Cape Kwoi, and Cape Cunningham, about 8 miles SW. The latter point is low and covered with bushes. A chain of reefs is up to 0.3 mile offshore to W of this point: The bay is reported to be clear of dangers and to be very deep. There is an observation pillar on Observation Point, about 3.5 miles WNW of Cape Cunningham. There are several native villages on the S shore of the bay.

Anchorage.—Anchorage can be taken off the cove which is about 0.8 mile S of the observation pillar. Small vessels with local knowledge can anchor between the before-mentioned chain of reefs and the main island.

Pomio Village is situated on the N shore of Jacquinot Bay, about 7.5 miles NNW of Cape Jacquinot.

Two leading beacons, in line bearing 352°, lead through the entrance in the reefs, where the channel is about 55m wide.

Pomio Harbor, formed by two reefs between 0.1 and 0.2 mile offshore from the village, is sheltered and has general depths of 14.6 to 18.3m. Vessels up to 40m long can be accommodated.

There is a wharf at the E end of the harbor, about 21m long, with depths alongside of 4.5 to 5.5m. There is foul ground E of the wharf.

9.35 Between Cape Cunningham and **Cape Beechey** (5°56'S., 151°12'E.), the coast is regular and steep-to. The coast, SW of the latter cape, consists of deep bays, separated by low points, and backed by land that attains a height of 914m, about 7 miles inland. Small vessels with local knowledge can anchor W of the reef off the cape. Cape Dampier, 11 miles SW of Cape Beechey, is high, steep, and prominent. A group of rocks is charted W of Cape Dampier.

Montagu Harbor, entered W of a point located about 10 miles W of Cape Dampier, is open to SW winds.

Vahsel Harbor, entered between Hede Point and Roebuck Point, about 1 mile SW, is partially exposed to SE winds. The former point, about 6 miles SW of the NE entrance point of Montagu Harbor, has a reef on which the sea breaks heavily, extending 183m S from it. Roebuck Point is 50m high, flat, and backed by some conical peaks. Extending E and NE for a distance of 0.6 mile from the point is a reef on which the sea breaks heavily. A small mangrove-covered islet lies close within the N extremity of this reef. An islet stands on a reef, about 1.5 miles E of Roebuck Point.

Anchorage can be taken by small vessels with local knowledge, in 3 to 4.5m, in the SW part of Vahsel Harbor. Vessels approaching the harbor should pass N of the mangrove-covered islet, and not less than 0.15 mile off it because of its fringing reef.

Fulleborn Harbor, entered about 8 miles WSW of Roebuck Point, is bounded on the E by Cape Schirlitz, conspicuous for its flatness. A large reef, which breaks heavily, divides the entrance into two channels; the E channel is reported as being deep. Anchorage can be taken in moderate depths in either of the coves at the head of the harbor.

Linden Harbor, between the mainland and several off-lying islands connected by reefs, affords anchorage, in 29 to 37m. There are five entrances into the harbor, the W of which has a depth of 7.3m. Some of the channels are very narrow. The edges of the reefs are steep-to, as is the shore of the mainland in the E part of the harbor. Coconut plantations line the shore of the harbor.

Thilenius Harbor (Gasmata), about 8 miles W of Linden Harbor, is sheltered by a chain of islands, within which are several islets and reefs. The E entrance is the main entrance.

Ablingi Harbor, entered between Awob Point and Cape Kablungu, 5 miles WSW, is open to S winds. The latter point is precipitous and about 30m high. A river discharges into the head of the harbor. A reef extends from Awob Point; close S of the point is Ablingi Island. A light is shown on the S side of Ablingi Island.

Anchorage.—Anchorage can be taken by vessels with local knowledge, in 4.5 to 9.1m, on the W side near the head of the harbor. The anchorage is protected from the S by a projecting point.

9.36 Luschan Harbor (6°18'S., 150°01'E.), entered W of Cape Kablungu is open to SW. It affords anchorage, in 28m, S of the entrance of the Johanna River.

Between Luschan Harbor and **Cape Bali** (6°19'S., 149°41'E.), the coast is indented by some open coves and is fronted by numerous islands and reefs to within 3 miles of the shore. The latter point is high and has round, thickly-wooded projections. Cape Bali is reported to be a poor radar target from 27 miles. About 10 miles W of Cape Bali and about 4 miles offshore are the Aweleng Islands, which are low. Breakers have been reported to the N of these islands.

Mowe Harbor, entered about 9 miles NW of Cape Bali, is protected by three high islands, inside which are several small coral patches which may easily be avoided. A reef, with rocks above water, is close SE of Geglep Island, the SE island. Alau Passage, N of Ganglo Island, the N island, is considered to be the best entrance. It presents no difficulty as the reef fringing the NW end of the island shows clearly. Anchorage can be taken in the N part of the harbor, W of Ais Island, in 10 to 22m. The islet is located close off the E shore, about 1 mile ENE of the NW of the of Ganglo Island.

Between Mowe Harbor and Cape Merkus, the coast is indented by a wide bight. A number of small rivers flow out through this coast which is from 91 to 122m high. Some reefs and islets are close off the NE corner of the bight. The Pulie River, which discharges between two hills located about 8 miles NE of the cape, causes discoloration of the water as far W as the cape.

9.37 Arawe Harbor (6°09'S., 149°02'E.) is located between Cape Merkus, on the N and E, Pilelo Island, on the S, Arawe Island, on the SW, and by Ausak Island and Kumbun Island, on the W and NW. The cape is fringed by a drying reef which extends about 0.1 mile SW. The shore NW of the cape is also fringed by reefs and fronted by several detached reefs. There are three entrances to the harbor, one N of Pilelo Island, and the others E and W, respectively, of Arawe Island. A small jetty is about 0.3 mile N of Cape Merkus.

Pilelo Island, 44m high, is fringed by a narrow reef. It lies S of and is separated from Cape Merkus by a deep channel which is about 0.4 mile wide.

Arawe Island and Ausak Island, separated by Kumbun Passage, are fringed by reefs. The latter island is connected by reef on its S side to the E end of Kumbun Island.

Caution.—A reef lies 0.5 mile E of the N end of Arawe Island. A 7.3m shoal lies 0.5 mile W of the jetty. A 3.7m patch lies N of this shoal, about 0.5 mile WSW of the jetty. A reef lies 135m WNW of the jetty. A larger reef lies about 0.2 mile WNW of the jetty.

A 9.1m depth lies about 411m W of the jetty. A foul area extends 183m off the N side of the E end of Arawe Island.

Between Cape Merkus and **Cape Bushing** (5°50'S., 148°34'E.), the coast is fronted by Arawe Islands and some off-lying reefs. Several bays, with small rivers entering them, indent this coast. The points separating the bays are of moderate height and appear as islands from a distance. **Cape Peiho** (5°56'S., 148°45'E.) is a prominent headland.

Caution.—The waters off the W coast and off the W part of the S coast of New Britain have not been completely surveyed. Dangers other than those charted may exist.

Dampier Strait

9.38 Vitiaz Strait, which is described in Pub 164, Sailing Directions (Enroute) New Guinea, should be used in preference to Dampier Strait.

Dampier Strait is about 13 miles wide between Grass Point, the W extremity of New Britain, and Cape Umboi, the E end of Umboi Island. There are many dangers in the S part of the strait, but there are deep channels which can be navigated under favorable conditions of light.

Whirlwind Reef, in the N approach to Dampier Strait, about 44 miles NNW of Cape Gloucester, consists of a sand cay which dries 0.3m standing on the N edge of a reef. The latter is about 2 miles long and has the shape of a horseshoe. Some rocks, from 0.3 to 0.6m high, are about 3 miles N of the sand cay.

In 1989, Whirlwind Reef was reported to lie 1.25 miles NE, and the rock 1.5 miles E of their respective charted positions.

Between Cape Bushing and Grass Point, the coast is fringed by a narrow reef. The E part of this coast is fronted by several reported dangers. The latter point has a number of grassy fields in its vicinity; the remainder of the coast is wooded. Mount Tangi, 1,548m high, and Mount Talawe, 1,827m high, back this coast and serve as prominent landmarks.

The N part of this coast, between Lagunen Point and Dorf Point, is cliffy and from 15 to 30m high. A lagoon lies beyond the former point, within the fringing reef. There are several villages along this coast. Cape Gloucester, the NW extremity of New Britain, will be described later in [paragraph 9.46](#).

Ritter Island (5°31'S., 148°07'E.), 137m high and steep, is about 12 miles WNW of Lagunen Point.

Caution.—Ritter Island has had an active volcanic career. A submarine volcano, which last erupted in 1974, lies close S of the island. The area should be given a wide berth.

Sakar Island, partly wooded and formed by a volcano, is 998m high. The mountain slopes gently to the sea in all directions.

Umboi Island, volcanic and mountainous, is 1,585m high; it is densely wooded, except for some cultivated parts. The extreme S part of the island is quite low. On the N and W sides, high land descends steeply to the sea.

9.39 Tolokiwa Island (5°19'S., 147°37'E.), 12 miles NW of the NW extremity of Umboi Island, is a volcanic cone, 1,396m high; it is wooded and inhabited. The island is fringed by a reef extending 0.5 to 1 mile offshore. An islet about 1 mile W of the NW side of the island forms a harbor for small craft.

The Siassi Islands are on an area of extensive reefs S of Umboi Island. The E part of this area impinges on the swept channel portion of Dampier Strait. The area has not been completely surveyed.

Marien Harbor, on the S end of Umboi Island, is a small protected inlet approachable only by small craft with local knowledge.

Between **Graah Point** (5°49'S., 148°02'E.) and **Cape Umboi** (5°38'S., 148°06'E.), the coast is fringed by a narrow reef and fronted by dangers. This entire coastal water area has not been examined.

The W coast of Umboi Island, between the S end of the island and Higgins Point, is fringed by reefs and fronted by dan-

gers. Between Higgins Point and Cape King, the coast is fairly regular. A fringing reef borders the coast for a distance of 7.5 miles S of Cape King. Rocks are found 0.75 mile offshore, about 6.5 miles S of Cape King. Cape King is rocky; spurs from the high land within extend down to the coast; the cape is fringed with a reef that dries in patches to almost 0.2 mile offshore.

A 7.3m shoal lies 7.75 miles W of Higgins Point; O'Brien Shoal, unsurveyed and with a depth of 3.7m, is about 6.8 miles NNW of it. A 9.1m shoal lies about 5.5 miles N of O'Brien Shoal.

Hein Islet, 29m high and wooded, is about 3 miles NNW of Cape King; charted shoals are E and SW of it. The area between Hein Islet and Sakar Island has not been surveyed.

Luther Anchorage, open to the NNW, is between Cape King and a reef extending from Rawlings Point. Anchorage should be attempted only with local knowledge and favorable light. Approach Cape King on a bearing of about 095° until Hein Islet is astern bearing 333°, then bring that islet astern on that bearing and steer for the anchorage. Vessels can anchor in 24m, with Rawlings Point bearing 227° and Hein Islet bearing 332°.

New Britain—North Coast

9.40 The N coast of New Britain, between Cape Gloucester and the NW point of the Gazelle Peninsula, is formed by stretches of mud, rock, and sand. These stretches are interrupted by cliffs and steep slopes that generally are the seaward sides of hills and mountains and the terminals of mountain ridges. Low, undulating, and hilly terrain backs the sandy stretches. Muddy shores are as a rule bordered by mangroves and swamps.

A belt of active volcanoes is found along the N coast. The low relief of this coast is broken by a large number of volcanic peaks, which attain a maximum height of about 2,286m in its NE part. A large number of eruptions have occurred in recent times. Geysers and hot springs are numerous. The Willaumez Peninsula has many volcanoes with lofty cones. The cluster of volcanoes at the W end of the island is separated from those in the range to the E by a broad isthmus of undulating terrain.

The W and N coasts of the Gazelle Peninsula have stretches of mud, rock, and sand that alternate with cliffs and steep slopes. Low, hilly, and undulating terrain backs the coast. The interior of the peninsula is hilly and mountainous.

Mountains begin to appear as Borgen Bay is approached. The low-lying shores, covered with black sand, extend a short distance back to a belt of trees, and gradually slope off into mountains 1,829m high.

The Willaumez Peninsula, projecting 30 miles NNE from the coast, is mountainous and has a large crater lake at its NE end. The W coast of the peninsula is heavily wooded and has several prominent peaks. Mount Bangum, 991m high, is about 2.5 miles E of Cape Schellong. Mount Bulu, 1,164m high, is located about 2.5 miles E of Cape Goltz. Mount Lotomgan, a distinctive summit, 593m high, is about 5 miles SSE of Mount Bulu. Willaumez Peninsula is a good radar target from 25 miles.

Mount du Faure, 752m high, backs the SW coast of Stettin Bay. Mount Welcker, 1,105m high, is the N and highest of a

group of mountains extending from 5 to 13 miles NNW of Mount du Faure.

Cape Hoskins (5°26'S., 150°32'E.) is bold, cliffy, and backed by high mountains. Mount Matalock, 1,056m high, and Mount Mululus, 1,313m high, are located 10 miles WSW and SW, respectively, of the cape. Mount Pyramid, 272m high, is 12 miles SE of the cape. A range of high mountains, running N and S, extends a short distance inland of a line joining the cape with Mount Pyramid. Mount Lolla, 819m high, is near the N end of this ridge.

9.41 Lolobau Island (4°55'S., 151°10'E.), W of Cape Torkoro, is prominent from the offing. Its summit is an active volcano, 932m high, with a prominent split. The volcano, as a rule, does not emit much smoke, except after a heavy rain. A conical peak, 580m high, lies near the E end of the island which terminates in a red cliff. Lolobau is about 0.4 mile ESE of its charted position.

Cape Torkoro is steep-to with high cliffs. Mount Galloseulo, 1,173m high and prominent, is located about 25.5 miles SW of the summit of Lolobau Island. Mount Bamus, an active volcano, 12 miles NE of the summit of Mount Galloseulo, rises to a height of 2,248m. The Father (Mount Ulawun), 9 miles SSW of the cape, is an active volcano, 2,300m high. Mount Likuruanga, 990m high and appearing as an island from the offing, lies close within the cape and is separated from Mount Ulawun by a belt of low land.

Watom Island (4°07'S., 152°05'E.), 5 miles W of Cape Tawui, is 351m high. It has a broken ridge without any marked summit.

The N coast of New Britain, between Cape Gloucester and the N extremity of the Willaumez Peninsula, has not been closely examined. Reefs and dangers are charted up to 10 miles offshore.

Kimbe Bay, between the Willaumez Peninsula and Cape Torkoro, is spacious, but is encumbered by numerous reefs.

Between Cape Torkoro and Cape Lambert, the coast is fronted by reefs and dangers to a distance up to 8 miles. The N coast of the Gazelle Peninsula is divided into two peninsulas by Ataliklikun Bay. The N coast of the W peninsula is fringed by a barrier reef which lies up to 7 miles offshore. The N coast of the E peninsula is fairly steep-to.

Islands and Dangers North of New Britain

9.42 The Witu Islands (Vitu Islands) (4°42'S., 149°16'E.) consist of several islands and widely-scattered reefs. There are scattered dangers around the islands, but the channels between the islands and reefs are wide and deep. The Witu Islands are of volcanic origin and between 152 to 590m high; they are partly or entirely reef-fringed. Unea Island and Garove Island are mountainous and are the most important islands. The lesser islands of the Witu Islands are wooded, hilly, and mountainous; there are probably very few areas of low-lying terrain on the islands.

Unea Island (4°55'S., 149°09'E.) is the S island of the Witu Islands. It is 590m high, dome-shaped, and wooded. Near the E end of the island are two peaks, 500m and 462m high, respectively. The W part of the island is about 150m high, grassy, and undulating.

The island is fringed by a reef extending up to 0.6 mile offshore. Some islets and rocks are on the NW side and off the S end of this reef. A fairly continuous barrier reef, lying up to 1.5 miles offshore, surrounds the island, except on its SE side. Duaga Islet, 49m high, is on this reef about 2.3 miles ESE of the N end of the island. Two wide and deep passages lead through the barrier reef near the islet to the open water inside. These reefs and passes are readily identifiable under proper conditions of light.

The fringing reef on the W side of the S end of Unea Island was reported to have extended seaward; passage between it and Johann Albrecht Reef, about 0.4 mile SSW, is unsafe. The sea breaks on Johann Albrecht Reef, 1.25 miles SSW of the island.

Nambabad Islet is on the fringing reef close S of the S extremity of Unea Island. A light is shown from Nambabad Islet.

Duaga Harbor, Bali Harbor, and Papua Bay provide sheltered anchorage, according to season, for small craft with local knowledge.

9.43 Garove Island (4°41'S., 149°30'E.), formed by the broken rim of an old crater, is shaped like a horseshoe. It rises to a height of 350m and is densely wooded. Sandy shores, interrupted by cliffs and steep rocky slopes, are found around the island. Inland are lowlands that range from narrow coastal strips to valleys extending as far as 2.5 miles inland. There are some swamps, but most of the low ground is covered with plantations. A trading station and many coconut palms are found on the NE side of the island.

A chain of forested hills extends through the island with deep valleys. From offshore, Garove Island appears as several small islands.

Reefs, extending but a short distance on the N side and about 0.5 mile from the SE point, fringe the island.

9.44 Peter Haven (4°40'S., 149°33'E.) ([World Port Index No. 56850](#)) is formed by a sunken crater. It is protected by reefs separated by passages. The middle passage is the only one used by large vessels. A 271° range, marked by beacons, leads through the passage. A wharf, with a depth of 7.6m alongside, is on the E side of the inner harbor. Anchorage is available in the outer harbor, in 33m, and in the inner harbor, in about 15m, with limited swinging room.

Johann Albrecht Harbor (4°42'S., 149°30'E.) is very deep and is formed by a large crater with a sunken lip to the S. The harbor is too deep for anchoring due to depths of 72 to 145m. Vessels with local knowledge can anchor in the E part of the harbor, in 37m. Anchorage for small vessels is on the SW side of the harbor, in depths of 18 to 37m. Such vessels can also anchor, in 7.3 to 12.8m, N of a small islet which is close off the E shore of the harbor.

The holding ground is good, mainly black sand and coral. The anchorages are affected by swells in strong SE winds.

Widu Harbor, an open cove on the W coast of Garove Island, affords shelter to small vessels, having local knowledge, during the Southeast Monsoon. A 3.9m shoal is charted near the head of the bay, almost 0.5 mile NE of Cape Widu. Vessels entering the harbor should avoid the spit off the S entrance and the shoals in the N part of the harbor. Anchorage can be taken in about 37m.

Widu Reef, about 0.5 mile long, is about 2.8 miles WNW of Cape Widu. It dries at LW and usually breaks.

Mundua Island, Vambu Island, and Undaga Island, the largest of this group of islands and dangers, are 152m high and wooded. Cape Kurabo forms the SE end of Mundua Island. They should be avoided by all except small vessels with local knowledge, due to the number of charted reefs and shoals N of the group. Other dangers extend E and W from the group. Many of these dangers have not been examined.

Planet Harbor (4°38'S., 149°20'E.), on the W side of Mundua Island, provides anchorage, in 40m, for small vessels with local knowledge. Such vessels should only enter under favorable conditions of light in order to avoid the reefs.

Narage Island (4°33'S., 149°07'E.) is a round island, surrounded by a reef, which on the N side is about 0.3 mile offshore. There is a boiling spring on a sandy beach on the SE side, and another on the SW side, where there is a geyser that throws up water to a height of 9.1m.

Caution.—A breaking reef, about 3.5 miles long, is about 1.4 miles N of the island. A breaking reef is about 1 mile WNW of the island. A rock, with a depth of 5.5m, is about 1.3 miles SW of the island. Two rocks, with depths of 5m, about 0.8 mile SE of the island.

A chain of reefs extends about 5 miles in a SW direction from a position about 3 miles SW of the island. A shoal was reported to be about 4.5 miles E of the island.

9.45 Otilien Reef, 18 miles W of Narage Island, is an atoll formed by a group of four reefs. The W reef is always uncovered and is marked by breakers. A sand cay is on this reef. There are entrances on the N and S sides of the atoll.

Whirlwind Reefs, about 55 miles WNW of Unea Island, have been previously described in [paragraph 9.38](#).

Sherburne Reef, 97 miles NW of Narage Island, consists of two parts, the S of which nearly dries. A passage, 0.3 mile wide, leads through the W side of the S reef into the lagoon. Small vessels with local knowledge can anchor in the lagoon, clear of the isolated patches. The N reef has a deep passage, 183m wide, on its W side.

Circular Reef, about 11 miles WSW of Sherburne Reef, nearly dries. A passage, 183m wide, leads from the S into the lagoon, where there are a number of shoal patches which show up well under favorable conditions of light. Shoal ground extends 4 miles S from the S end of the reef.

Between Cape Gloucester and Silimati Point, 7 miles ESE, the coast is slightly indented by a shallow bight. The broken barrier reef fronting this coast has been described earlier in this section.

Caution.—Foul ground is found extending seaward along the entire N coast of New Britain; many portions of this area are unsurveyed or are not completely surveyed.

9.46 Cape Gloucester (5°27'S., 148°25'E.) is 30m high and wooded. Razorback Hill rises steeply to 174m, nearly 2 miles SSW of the cape.

A broken barrier reef, with drying rocks and a general depth of less than 1.8m, is 4 to 6 miles offshore N of Cape Gloucester. Fronting the coast, the reef extends nearly 20 miles E from its W extremity, which is about 5 miles NW of Cape Gloucester.

A shoal area, about 0.3 mile long and which dries in places, is about 0.5 mile NW of Cape Gloucester.

Borgen Bay is entered between Silimati Point and Ulo Point. It affords anchorage for small vessels with local knowledge and with good light conditions in the clear part of the bay, in 37 to 46m. Shelter is best during the Southeast Monsoon, but heavy swells roll in during the Northwest Monsoon.

Between **Ulo Point** (5°31'S., 148°35'E.) and the Willaumez Peninsula, the coast is little known and is fronted by reefs. There are some villages E of Cape Gauffre, which is 5 miles ENE of Ulo Point, and E of Cape Kiepert, 4.5 miles farther East. Reefs, some of which are above-water, extend up to 2.5 miles off Cape Gauffre. This point should be given a wide berth.

Rottock Bay (El Bay), between Cape Kiepert and an unnamed point 9 miles E, has not been closely surveyed.

Several reef-fringed islets, including Tamuniai Islet, lie off the coast between the unnamed point and Cape Raoult, about 6.5 miles East. The entire coastline is fronted by reefs extending offshore for a considerable distance in places. Cape Raoult (Cape Raoul) is low; Samudo Islet is about 2 miles N of it.

Between Cape Raoult and Cape Neumayer, about 15 miles SE, the coast is considerably indented, fringed with reefs, and fronted by dangers. Maruro Reef, about 2 miles long, is about 5.5 miles NW of Cape Neumayer. A 5.5m shoal patch, the position of which is approximate, is about 4 miles N of the same point. Breakers were reported about 4.5 miles, bearing 320° from the NW extremity of Maruro Reef.

Small vessels with local knowledge and favorable light conditions can anchor in Rein Bay, entered close S of Cape Neumayer, in 12.8m, about 0.5 mile SSW of the sandy islet about 0.6 mile S of the cape. Utano Islet is about 1.5 miles ENE of Cape Neumayer.

Mount Penck, of which Rudiger Point is a spur, is prominent. **Emeline Bay** (5°28'S., 149°39'E.), W of Rudiger Point, is moderately clear and affords anchorage for vessels with local knowledge in its E part.

9.47 Eleonoro Bay, entered between Rudiger Point and Kavutu Point (Wilson Point), 7 miles ESE, is sheltered by a group of islands lying NE and E of Kavutu Point. Talasea Island and Nugakau Island lie within 1.75 miles ENE of Rudiger Point. A post office is situated on the Nugakau Island. Kalapiai Island, the largest and S island, lies 2 miles SE of Rudiger Point. Vessels with local knowledge can find good anchorage in the bay, especially in Comet Harbor, a sheltered cove in the SE part of the bay. Depths of 14.6m are found in the cove.

Riebeck Bay, entered between Kavutu Point and Cape Bastian, about 12 miles NE, appears to be encumbered by reefs, but there is a well-sheltered cove in the NE corner. Vessels with local knowledge will find anchorage, in 20.1m, about 0.5 mile off the shores of this cove.

The Willaumez Peninsula, marked by a light on **Cape Hollman** (5°00'S., 150°05'E.), its N point, projects about 30 miles NNW from the coast of New Britain. Its W coast is fronted at intervals by detached reefs, somewhat in the form of a barrier reef. The outermost is about 6 miles W of Cape Schellong, the W extremity of the peninsula.

The N coast of the Willaumez Peninsula, between Cape Hollman and Cape Campbell, to Cape Heussner, about 2.3

miles SSW, is fringed by reefs and fronted by dangers to a distance of 2 miles. A reef, with some rocky islets on it, extends 2 miles E from Cape Heussner. There is a narrow passage between the inner islet and the reef fringing the cape.

Kimbe Bay, between Willaumez Peninsula and Cape Turkoro, is spacious but is encumbered by reefs.

Kimbe Island (5°12'S., 150°22'E.) is 148m high and is marked by a light from its summit.

Oto Reef, 8.75 miles SSW of Kimbe Island, is marked by a beacon.

Wulai Island (5°21'S., 150°29'E.), about 5 miles NNW of Cape Hoskins, is surrounded by a reef with two deep passages on its SW side. A narrow, but clear passage, marked by range beacons, leads through the SE part of the reef. Good anchorage can be taken by vessels with local knowledge, in 10.9 to 46m, inside the reef.

Lollo Reef lies between Wulai Island and Cape Hoskins.

Wangore Bay, between Cape Heussner and the N entrance point of Talasea Harbor, about 12 miles SSE, is deep and exposed. A number of islets and reefs are up to 3 miles NE of Cape Heussner.

9.48 Garua Harbor (5°17'S., 150°05'E.) is entered about 13 miles SSW of Cape Heussner. The harbor is protected, but there are reefs and rocks lying within about 3.5 miles of the entrance.

Garua Island is in the entrance of the harbor, close NE of the S entrance point. There is a jetty off Talasea Government Station, on the S side of the harbor, close within the entrance. A jetty is situated on the N side of Garua Island.

Observation Island, reef fringed, is about 0.8 mile NNW of the N end of Garua Island.

Anchorage.—Anchorage can be taken by vessels with local knowledge off the government station. The anchorage, in 40 to 46m, S of Observation Island, has a rocky bottom.

Caution.—The appearance and disappearance of various islets and reefs have been reported in this vicinity, apparently due to volcanic action. Great care is necessary when navigating in these waters. Several geysers and mud springs are found along the shores of Talasea Harbor. Many uncharted coral heads have been reported in the harbor.

Stettin Bay, spacious and deep, indents the coast between the S entrance point of Talasea Harbor and an unnamed point located about 6.5 miles W of Cape Hoskins. A river flows into the bay, about 13 miles SW of the unnamed point.

The shores of the bay are fringed by a reef; detached dangers are up to 4 miles offshore. Vessels with local knowledge can anchor, in 37m or more, from 1 to 2 miles from the head of the bay. Such vessels should make the approach only under favorable conditions of light.

9.49 Kimbe (5°33'S., 150°09'E.) ([World Port Index No. 56835](#)), which is the District Headquarters for this area, is situated 2.75 miles NE of Mount Du Faure on the N coast of New Britain Island.

Depths—Limitations.—Kimbe Wharf, built from reclaimed land, consists of Berth No. 1, a T-shaped pier face, 120m long, with a depth of 12m alongside. A dolphin is situated about 25m NW of the pier. Berth No. 2 is 50m long, with a

depth of 5.5m alongside and stands inshore of Berth No. 1. Vessels may berth at Kimbe Wharf either port or starboard side-to as the pilot may advise.

Berth No. 3, standing on the E side of the Small Ships Wharf, is 17m long, with a depth of 5.9m alongside. Berth No. 4 and Berth No. 5 stand on the W side of the same wharf. A barge ramp, which is 9m wide, projects from the shore stands close E of the Small Ship Wharf. Caution is advised as an obstruction lies 0.35 mile NE of the wharf.

Pilotage.—Pilotage is compulsory. Notice should be given 4 hours before ETA and 6 hours before ETD, with amendments at least 2 hours before each, if required. The pilot boards 1.9 miles SSE of Grabo Reef.

Anchorage.—The Quarantine Anchorage is situated 2 miles NE of the wharf.

9.50 Commodore Bay, encumbered by reefs in its outer part, indents the coast between Cape Hoskins, which is bold, cliffy, and backed by high mountains, and Cape Reilnitz, about 13.5 miles East. Cape Reilnitz is a spur of Saddle Mountain, which rises to a height of about 213m 1 mile ENE.

Islets, reefs, and detached dangers lie up to 6.5 miles offshore between the E entrance to Commodore Bay and Cape Koas, about 27 miles NE.

Bangula Bay (5°24'S., 150°55'E.) is entered through a wide and deep channel between Stein Reef and Karel Reef.

Anchorage.—Anchorage is available, in 37m, in Planet Bay, a small cove indenting the SW corner of Bangula Bay; rocks, with depths of less than 1.8m, SW of the anchorage should be avoided.

Anchorage is also available between Karel Reef and the SE shore of Bangula Bay.

Due Reef (5°17'S., 150°58'E.), marked by a light, lies 3.5 miles W of Apapulu.

Small vessels with local knowledge can anchor about 0.4 mile W of the mouth of the Olimo Tavo River, about 4 miles SSW of Cape Koas.

Vessels can also anchor in an open cove about 8 miles SW of Cape Tokoro and about 0.4 mile offshore. Smaller vessels can anchor farther in, about 0.1 mile offshore, in 29m.

9.51 Lolobau Island (4°55'S., 151°10'E.) has some sandy shores, but in most places steep slopes, gullied by many small streams, rise from the sea or close inland from the shore. The island is covered with rain forest except near the settlements and plantations. The island is fringed with reefs up to 1.25 miles offshore.

Tiwongo Island is separated from the SE end of Lolobau Island by a narrow channel; Tiwo Reef is 0.6 mile S, and Passage Reef 1.75 miles SSW, respectively, from Tiwongo Islet.

Anchorage.—Anchorage is afforded to small craft in a depth of about 8m in a passage between Tiwongo Island and Lolobau Island; vessels can also anchor, in a depth of 16.5m, on the W side of Tiwongo Island.

Hermo Reef and Ake Reef are about 3 miles SW of the S end of Lolobau Island. Several unnamed danger areas extend as far as 1 mile seaward from the Willaumez Peninsula into Expectation Strait.

The E approach to Expectation Strait is encumbered with reefs, including Tokoro Reefs, Sido Reef, Eli Reef, Hete Reef, and Loto Reef.

Muli Island and Banban Island, 60m and 210m high, respectively, are 2.75 and 3.75 miles WNW of the W end of Lolobau Island. Many detached reefs which are hard to identify are N and W of the islands; the N is North Reef.

Banban Reefs, also hard to identify, extend 11 miles WSW from Banban Island. Father Reef, a large group of detached patches, are at the W end of Banban Reefs.

9.52 Kakolan Islet (4°54'S., 152°23'E.), 60m high, is close off the NW side of Cape Tokoro.

Between Cape Tokoro and Cape Lambert, the coast curves N round Offene Bay; for about 30 miles N of the head of the bay is bordered by long stretches of mud, between which are some sandy shores. Continuing N along the W side of the Gazelle Peninsula to Cape Lambert, the shore becomes rocky and steep sloping, with some scattered stretches of sand. The sandy shores are backed by margins of low and undulating terrain that are generally less than 1.5 miles wide between the shore and the high mountains backing the coast. The muddy shores are backed by swamps and intersected by streams. The coast and inland mountains are covered with rain forest. Hixon Bay, which indents the coast between Kakolan Islet and Rangambol Point, is fringed by a narrow reef. Its low shores rise gradually to Mount Likuruanga and Mount Ulawun. Two small rivers, the banks of which are mostly swampy and overgrown with sago palms, flow into the head of the bay. There is a village near the mouth of the E river.

Mimi Reef, Korleili Reef, and an unnamed reef are in the E approach to Hixon Bay.

Anchorage.—During the Southeast Monsoon, vessels can anchor in depths decreasing gradually from 36.6m, about 0.5 mile off the shores of the bay. Small vessels with local knowledge can anchor, in 14.6m or 16.5m, 0.3 mile off the mouth of the E river.

Small vessels with local knowledge can anchor SE of Rangambol Point, inside some reefs. The entrance between the reefs is clear and there is anchorage space within of about 0.3 mile.

The Korindindi River and the Nessai River flow into the head of Offene Bay, about 5.8 miles ESE and 8.5 miles ENE, respectively of Rangambol Point. A village stands at the mouth of the latter river. An extensive flat, grassy plain, which lies out against the surrounding brushwood, is in this vicinity.

9.53 Tavanatangir Harbor (Powell) (4°48'S., 151°41'E.), entered between **Ailo Point** (4°49'S., 151°41'E.) and an unnamed point nearly 1.5 miles NW, is protected by a line of reefs. The Tavanatangir River discharges into and indents the NE part of the harbor. A deep channel, about 0.2 mile wide, leads into the inner harbor.

The passages between the reefs vary from 91 to 549m wide. Ailo Point is fringed by a reef that extends 0.25 mile offshore, leaving a deep 0.25 mile wide channel between it and the S detached reef. The main channel into the harbor leads between the S detached reef and the North. It has a width of about 549m. A light is shown from the S end of the N reef. The reef, 1.5 miles N of the S reef, is close off the main island, leaving only a very narrow passage between; S of this reef the channel, though narrow, is straight and deep.

Keila Islet, standing on a reef close E of the outer line of reefs, has a white sandy beach and serves as a prominent mark for approaching the harbor.

Between the N entrance point of Tanvanatangir Harbor and Mulua Point, about 2 miles NNW, the coast has a level sandy shore and is overgrown with brushwood. Between the latter point and Wunambere Point, about 10 miles N, the coast is intersected by three small rivers and fronted by reefs to a distance of 1.75 miles. A prominent waterfall is located near the mouth of the Toriu River, about 2.8 miles N of Mulua Point.

9.54 Pondo Harbor (4°34'S., 151°39'E.) ([World Port Index No. 56840](#)) is between the reefs extending S from Pondo Point and the reefs extending 1.75 miles W from a position on the coast, about 2 miles SE. Pondo Point, 3 miles NW of Wunambere Point, is low, and like the coast in this vicinity, covered with trees. A small river flows out close E of the point. The settlement of Pondo is in the NE corner of the harbor. A small pier, reported to have a depth of 4.5m at its head, is situated in the N part of the harbor.

Anchorage.—Anchorage can be taken by vessels with local knowledge, in 36 to 55m, in the middle of the harbor. Small vessels with local knowledge can anchor, in 16.5m, white sand, in the N part of the harbor, N of a shoal with a depth of 0.6m, midway between the E side of the harbor and the spit extending S from Pondo Point.

Caution.—A spit, with depths of less than 1.8m, extends 750m S from Pondo Point. A deep channel, about 366m wide, separates the S end of this spit from a shoal, with depths of 3.1 to 7.9m South. Between the S end of this shoal and the coast to the E, there are some detached shoals and reefs, with deep channels between them.

Between Pondo Point and Rangombol Point, 2.75 miles N, the coast is flat and sandy. Between the Rangombol Point and Matiu Point, 7 miles NNW, the coast is covered with mangroves. Several small rivers intersect the swampy shore.

Missamissakor, a rocky, uninhabited islet, is nearly 1 mile SE of Matiu Point. Small boats often shelter there.

Matiu Point, which is covered with mangroves, is fronted by a broad reef. A small, rocky islet lies close offshore in a position nearly 1 mile SE of the point. A large waterfall is located near a point 2 miles SE of Matiu Point. The Tongalikane River flows out about 3.3 miles NNW of the point. Between the river mouth and Rarakarakau Point, about 2 miles S, the coast is covered by high trees. A sandy beach is N of the river mouth.

Between Rarakarakau Point and Ponosarer Point, 5 miles N, the coast is fringed with mangroves and intersected by two small rivers.

The W coast of the Gazelle Peninsula, N of Rangombol Point, is fronted by a steep-to barrier reef that is 0.75 to 2.5 miles offshore. Small vessels with local knowledge can anchor, in 9.1 to 46m, between the barrier reef and shore. The continuation of the barrier reef around the NW end of the Gazelle Peninsula is described later in this sector.

9.55 Cape Lambert (4°11'S., 151°33'E.), bold and steep, is the convergent point of several mountain ranges and is a good landmark from all directions except from the NW. Cape

Wunawuwur, a wooded point, is located 2.5 miles E of Cape Lambert.

Between Cape Lambert and the W entrance point of Ataliklikun Bay, about 20 miles E, the barrier reef lies from 7 to 3 miles offshore and trends in a general ESE direction. This reef curves S from the position off Cape Lambert, passing about 2.5 miles W of Cape Pomas and then extends in a SSE direction, parallel with the W coast of the peninsula.

Elizabeth Reef, which dries and is apparently of volcanic origin, forms part of the barrier reef, and is 5.5 miles NW of Cape Lambert. A wreck lies stranded on this reef.

Norton Banks are on the barrier reef, about 2.8 miles NW of Cape Pomas. Rarende Reef and Rarende Angale Reef, separated by a narrow channel, are 2.5 miles W of Cape Pomas. There are several passages through the barrier, but they are only suitable for vessels with local knowledge under favorable light conditions. A beacon marks the N side of a narrow passage through the barrier reef, about 2 miles SW of Cape Pomas. Another beacon is 4.5 miles WSW of Cape Lambert.

A light is shown from the barrier reef, 6.75 miles N of Cape Lambert.

Many above and below-water dangers are charted between the barrier reef and the coast.

The Talele Islets, 3.25 miles ENE of Cape Lambert, are a group of islets on a cluster of reefs surrounded by deep water. One of the islets is 18m high.

Caution.—Local magnetic disturbance has been reported in the vicinity of Nambung Point.

Between Cape Lambert and the W entrance point of Ataliklikun Bay, there are several small inlets that afford anchorages to small vessels with local knowledge.

Lassul Bay is deep and clear of dangers in its W part. A passage about 183m wide between patches and the shore bank are on the E side of the bay. Depths of 9 to 22m are in the passage. The bay is reported to be fairly well sheltered even during N winds.

Between Giretar Point, 1.5 miles E of the E entrance point of Lassul Bay, and Sussum Point, 2.25 miles E, there are several small inlets fronted by islets and dangers. A plantation, with a flagstaff, is situated just W of Sussum Point. A patch, with a depth of 2.7m, is 0.75 mile NE of Giretar Point.

A beacon is about 0.8 mile NW of Giretar Point; another beacon 3 miles WNW marks the E end of a reef.

Massava Bay, entered between Sussum Point and a point about 1.5 miles W of the W entrance point of Ataliklikun Bay, affords restricted and sheltered anchorage, in 26 to 29m, about 0.3 mile offshore. The E side of the bay is fringed by reef.

Massikonapuka Islet, 0.75 mile NNW of Sussum Point, is at the E end of an inner barrier reef. Massava Islet is about 0.5 mile E of the same point. The islet, which is surrounded by reef, is wooded; the tops of the trees reaching a height of about 34m. The portion of the bay E of the islet is clear.

9.56 The channel, which separates Massava Islet from the coast to the W, is obstructed by a reef with a narrow passage on either side. A shoal, with a depth of 5.5m, is about 0.3 mile N of Sussum Point.

Ataliklikun Bay, entered between the point 1.5 miles E of the W entrance point of Massava Bay, and Cape Liguana, about 8

miles NE, is very deep. The latter point is dominated by a mountain, 430m high, at the W end of the Rembarr Range.

A reef extends about 1 mile offshore, close N of the Cape Ligan. Two shoals, with depths of 3.2m and 2.7m, respectively, are close outside this reef. Kambeira Bay, an open roadstead and the site of a trading station, indents the E shore of the bay, about 4 miles SE of the cape.

Urara Island, about 2.5 miles WNW of Cape Ligan, is fringed by a reef that extends 0.5 mile W and a short distance East. The island is low and wooded. A light is shown on the reef, close S of Urara Island. The light is obscured from the N.

Reimers Reef extends about 1.5 miles NW from a position about 0.8 mile NW of the reef extending W from Urara Island.

A reef fringes the shores of Kambeira Bay to a distance of 0.35 mile.

Seesten Reef, awash and steep-to, is in the SW part of Ataliklikun Bay, about 0.8 mile off a mission station.

Anchorage.—Small vessels can anchor, in 18.2m, sand, about 0.5 mile off the shores of Kambeira Bay. The depths shoal sharply within the 10m curve. Vessels approaching from the NE should steer to pass midway between the reefs extending from Cape Ligan and Urara Island, and then for the anchorage.

Between Cape Ligan and Cape Tawui, the rugged coast is rather steep-to, but has some dangers lying up to 1 mile offshore. Talili Bay indents the SE part of this coast.

Watom Island, separated from the coastal dangers by a wide and deep channel, is deeply furrowed and covered with vegetation. The bare rock showing through gives a many-tinted appearance to the island. A narrow fringing reef extends from the W side of the island.

The passage between Watom Island and New Britain is clear of dangers, except for Kambawel and Tomatikotop Reefs. Vessels using this passage are recommended to keep close to Watom Island, which is clear of off-lying reefs.

Kambawel Reef, awash, is about 1 mile offshore and about 5 miles E of Cape Ligan.

Tomatikotop Reef, which has a depth of 0.3m, lies close offshore, about 3 miles SSW of Cape Tawui.

9.57 Talili Bay (4°12'S., 152°08'E.) indents the coast between Kambakunda Point and Tomatikotop Reef, about 3 miles NE. The point, which is 7.5 miles E of Cape Ligan, is bluff and has the village of Kambakunda standing on it. There is a mission house at the village. A white cliff is about 0.3 mile S of the village.

There are patches of fringing reef around the shores of the bay. The 5.5m curve is from 137 to 548m offshore.

An SPM berth situated in Talili Bay can accommodate tankers up to 183m long, with a draft of 12.8m.

Anchorage.—Talili Bay is not recommended, except as a temporary anchorage, because the shore bank is steep and the bay is open to the N.

Anchorage is reported to be available, in 9m, W of Kambakunda Point, with the E end of Watom Island bearing 006°.

Anchorage can be taken, in 24m, on the W of the head of the bay.

Anchorage can be taken off Kurakakaul trading station, about 1.5 miles ESE of Kambakunda village.

Anchorage can be taken off the E shore with Ratawul Beach, 3.5 miles S of Cape Tawui, bearing 164°, 548m distant, in 18.3 to 22m, sand.

The Admiralty Islands and the Ninigo Islands

9.58 The Admiralty Islands consist of one large island and numerous smaller ones. Manus Island, the largest of the group, is densely wooded and hilly throughout. The saw-toothed mountains rise to a height of about 718m near their middle part and slope steeply, particularly to the N and South. A steep conical mountain is near the E end of the island. The sandy shores of the island are backed by narrow coastal strips of low and undulating ground.

A group of islands, of which Los Negros Island is the principal one, are off the NE end of Manus Island. Los Negros Island is low and has sandy shores. Coconut plantations are found along the coasts of both islands.

Seeadler Harbor (2°00'S., 147°19'E.), the most important port in the Admiralty Islands, is formed by Los Negros Island and a barrier reef on the N and E, and the NE coast of Manus Island on the S.

The off-lying islands are mostly flat and low; some islets, however, are formed by high hills. The vegetation throughout the island group is rain forest, except where planted in coconuts. Many of these islands are partly or entirely covered with coconut palms.

The Hermit Islands, about 90 miles WNW of Manus Island, are enclosed by a narrow reef, which is less than 1 mile wide and which surrounds an extensive lagoon. The group consists of four high, reef-fringed islands in the middle of the lagoon, and 13 smaller islands on the reef. On the two largest islands have hills ranging from 111 to 244m high. The hills are separated by valleys and low narrow isthmuses. There are margins of low and gently sloping ground around the hills that are covered with coconut palms. The islands in the lagoon are forested, except when planted in coconut palms. The islands on the narrow reef are mostly planted in coconut palms.

The Kaniet Islands, consisting of five small reef-fringed islets, are about 38 miles NNE of The Hermit Islands. They are low, flat, thickly covered with coconut palms, and connected to each other by reefs. The Kaniet Islands have been reported to be 1.5 miles ENE of their charted position. In 1987, the Kaniet Islands were reported to lie 3 miles NE of their charted position.

The Ninigo Islands, about 140 miles WNW of Manus Island, consist of six atolls, separated from each other by deep channels. There are about fifty islets on the atolls. Some of these low islets are covered with coconut trees, about 30m high. There are a few swampy areas.

The Purdy Islands are a small coral group of islets lying about 40 miles SSW of the W end of Manus Island.

Sherburn Reef (Doppel Reef) (3°21'S., 148°00'E.), lying 85 miles SSE of the E extremity of Manus Island, consists of two parts; the S reef, which is the largest, nearly dries. This reef has a deep passage of 0.3 mile wide on its W and a boat passage on its E; some small isolated reef patches lie in the lagoon. The N reef has a deep passage about 0.1 mile wide on its W side; anchorage may be available in the lagoon, which is clear of reef patches.

Circular Reef (Kreis Reef) (3°26'S., 147°47'E.) lies about 11 miles WSW of Sherburn Reef; shoal water extends 4 miles S from the S end of the reef, and the reef nearly dries. A passage lies on the S side of Kreis reef, about 0.3 mile wide. Good anchorage may be obtained in the lagoon, but clear of several patches of reef which show up in a good light.

In 1991, a reef was reported to lie in approximate position 3°07'S, 148°10'E, about 16 miles NE of Sherburne Reef.

Tides—Currents.—The prevailing current in the vicinity of Manus Island sets WNW at a rate of 1.5 to 2 knots. A cessation or reversal of this current may be experienced during the strength of the Northwest Monsoon.

A strong E current was experienced in the vicinity of the Purdy Islands during the months of February and March.

Currents in the vicinity of the Ninigo Islands appear to alternate in direction between SE and NW. The average rate is reported to be 1.25 knots, but little is known of these currents.

A strong NE current has been observed between Rambutyo Island and Baluan Island.

Depths—Limitations.—The many off-lying islets and islands lying E, S, and W of Manus Island are surrounded by depths of over 183m; deep water also closely approaches the N and E coasts of that island. Manus Island is fronted on the N by a broken line of barrier reefs that extend to the NW point of Los Negros Island.

Caution.—The Admiralty Islands have not been completely surveyed and vessels should navigate with caution in this area. Numerous uncharted reefs are reported to exist in the sea area bounded by the **Western Islands** (2°13'S., 145°54'E.), the SW extremity of Manus Island, Mbuke Island and Petersen Reefs. Many reefs and uncharted dangers are between Mbuke Island and the S coast of Manus Island.

Water spouts are frequently seen in the vicinity of the Admiralty Islands. Large quantities of floating pumice stone have been sighted W of the Purdy Islands; they appeared as flat islands from the offing.

Submarine disturbances have been reported about 3 miles SSE and 1 mile S of the S end of Lou Island. The SW entrance of St. Andrew Strait has been reported to be foul. A considerable area of foul ground has been reported in the N entrance of St. Andrew Strait. The islands in the vicinity of this strait have been reported to be incorrectly charted.

The relative positions of Lou Island, the Fedarb Islands, and the St. Andrew Islands are reported to be in error. The outline of Lou Island is also reported to be in error.

Shoal water has been reported between the Papialou Islands and Alim Island. A 14.6m bank has been reported about 18 miles SE of the Papialou Islands.

The islands and dangers W of Rambutyo Island have been reported to be incorrectly charted.

9.59 The S coast of Los Negros Island and the SE coast of Manus Island are fringed by a narrow reef. Patamu Island is about 1.8 miles S from the W entrance point of the small bay between Manus Island and Los Negros Island. The enclosing reef extends 274m S from the island and forms the N side of the preferred channel into Kelaua Harbor.

Kelaua Harbor (2°06'S., 147°16'E.) is small and has a number of reefs in its entrance. The reef which supports Patamu

Island extends 0.1 mile S from that island to the N side of the preferred channel into Kelaua Harbor. A reef, extending 91 to 183m offshore, fringes the N and S shores of the bay. Shoal ground, defined by the 1.8m depth line, extends 0.4 mile from the head of the bay. The village of Lauis is on a chain of hills, about 3 miles upriver of the entrance of the Lauis River, which discharges into the head of the bay.

Anchorage.—Anchorage can be taken, in about 31m, with the N end of Patamu Island bearing 080° and the S entrance point of the harbor bearing 131°. Vessels entering the harbor should do so with the sun abaft the beam, because the reefs are then more easily seen. The fringing reef of Patamu Island should be kept aboard until Inner Reef is identifiable, the passage N of which is to be preferred. Anchorage may be obtained by vessels with local knowledge, in depths of from 27 to 37m, in the S part of Kelaua Harbor, where there is room for several vessels.

Caution.—Outer Reef, 0.4 mile ENE of the S entrance point of the bay, has a least depth of 1.8m. Southward and SW of it are two reefs, with depths of 2.4m.

Middle Reef, with a depth of 4m, is about 600m S of Patamu Island.

Inner Reef, with a depth of 0.9m, is 700m SW of Patamu Island.

9.60 Between Sanders Point, 7.5 miles SW of the S entrance point of Kelaua Harbor, and South West Point, the approaches to the S shore of Manus Island are encumbered with reefs, shoals, and coral-fringed islands and islets lying up to 43 miles offshore.

Sanders Point is low and can be identified by a white sandy beach and a large clump of coconut palms, the only ones in the vicinity. The point is fringed by a wide reef which is reported to have extended farther W and S than charted.

Big Ndrova Island and Little Ndrova Island are close together, 2 miles ESE of Sanders Point, with a clear passage between them. Big Ndrova Island is 41m high.

Between Sanders Point and Sabumo Point, about 14 miles W, the coast is indented by two foul bays and is fronted by many dangers. Sabumo Point, low and wooded, is the termination of a range of mountains sloping gently toward the sea. Ndroval Island, 29m high and 1.5 miles SE of the point, is sandy and covered with a kind of reed grass. There are two hummocks on the island.

Between Sabumo Point and South West Point, about 26 miles W, the coast is fronted by numerous dangers. Malai Bay and South West Bay, separated by a large headland, indent the W part of this coast. Both bays are lined with mangroves, foul, and suitable only for small vessels with local knowledge.

South West Point is moderately high and densely wooded. Between this point and Alacrity Point, about 4.5 miles NNW, a reef fringes the shore to a distance of 2 miles. The coast is broken and rugged, and indented by many foul inlets. The vegetation along this coast is dense.

Between Alacrity Point and Sopa Sopa Head, the coast is very irregular, fringed by reefs, and fronted by dangers. Kali Bay, which indents this coast, has not been closely examined. It is said to be foul.

Caution.—The W approach to Manus Island is encumbered by shoals, reefs, and reef-fringed islands extending up to 20

miles off the S end. These dangers are more widely separated and are nearer to the N part of the coast.

Bipi Island (2°06'S., 146°24'E.), about 1 mile long and 9.1m high, is about 8 miles NW of Alacrity Point. Sisi Liu Island, 9.1m high and somewhat smaller than the above island, is about 1.5 miles NE of it, and Pahi Islet is about 2.8 miles farther NW. The islands are surrounded by reefs, and foul ground is between them and the Manus Island coast.

9.61 The N coast of Manus Island is fronted by a broken line of barrier reefs, approached through unobstructed water with general depths over 56m. The line of reefs lies between 2.5 and 5.5 miles from the coast and extends from a position N of Sopa Sopa Head to the NW point of Los Negros Island. The E end of the lagoon formed between the barrier reefs and the coast formed by Los Negros Island. Deep navigable passages extend through the barrier reef, but the lagoon is considerably encumbered with scattered reefs, shoals, rocks, and reef-fringed islands.

Caution.—Firing exercises take place N of Manus Island in an area bounded by a line joining 01°47'S, 147°40'E and 01°47'S, 147°00'E. A navigation warning is broadcast when such exercises are in progress.

Between Sopa Sopa Head and Mosely Point, the coast is indented by Shallow Bay, which is encumbered with mud banks. A number of low, flat, and densely-wooded islets are in the entrance of the bay. Higham Island, located nearly 1.5 miles E of Sopa Sopa Head, is planted in coconut palms. The head is rocky and fringed by a reef that extends about 0.5 mile offshore. Within the head, the land rises in a gradual slope to a saddle hill, 148m high, about 2.5 miles S of the point.

A group of three islands are about 5 miles WNW of Sopa Sopa Head. Mosely Island (Massong Island) and Buchanan Island (Bulumara Island) are on the same reef. Murray Island (Palawat Island) is detached and is surrounded by a wide fringing reef. All of these islands are covered with coconut palms. Considerable shoal water extends S from the group.

Harengen Island, 1.5 miles N of Sopa Sopa Head, is 51m high and densely wooded. On the W edge of the reef surrounding the island is Twin Rocks, about 6m high.

9.62 Nares Harbor (1°57'S., 146°39'E.), in the lagoon off the W end of the N coast of Manus Island, is formed by the reef-fringed shore, E of Mosely Point, two reef-fringed islands on the W, and Marengan Reef on the N. The harbor is sheltered, because the islands and reefs form a natural breakwater. The S shore of the harbor, E of Mosely Point, is reef fringed to a distance of 1 mile. A small promontory is about 2.5 miles ESE of Mosely Point.

A considerable tidal current has been observed to set E and W in the harbor without any perceptible rise or fall. Depths in the harbor vary between 18m and 57m.

Marengan Reef, which forms a natural breakwater, consists of two parts. The N edge of the reef is defined and has few apparent off-lying dangers. The S edge is not defined. It has several mushroom rocks cropping up close to it, with deep water around. Two sandy islands, 24 to 30m high, stand on the W part of the reef. Marengan Island, densely wooded and

having some coconut palms, has a village on its N side. Sori Island, which lies near the E end of the E part of the reef, is low, flat, and densely wooded. A village is on the S side of the island and there are some coconut palms. Mbuchonsaul Islet, a sand cay with a few trees on it, is close to the E end of the reef.

Challenger Shoal, 1.25 miles E of the same islet, has a least depth of 6.4m at its W end and 5.5m at its E end. Two shoals, with depths of 6.4m and 8.7m, respectively, are about 4 miles E of the islet.

Reefs and dangers lie up to 1 mile off the S shore of Nares Harbor.

Noru Island and Okoru Island (Krese Island), low, flat, and densely wooded, are on an extensive reef; both are planted with coconuts.

Anchorage.—Anchorage can be taken about 0.8 mile S of Sori Island, in about 33 to 37m. This position is SW of and clear of a 5m shoal.

There is also apparently good anchorage in the area between Harengen Island and the reef surrounding Okoru and Noru Islands, taking care to avoid the 9.1 to 12m shoal patches.

Directions.—Vessels approaching from the W should run parallel to and about 1 mile off the N scale of Marengan Reef until Mbuchonsaul Islet bears 226°; then alter course to 177° with **Failure Rocks** (1°58'S., 146°42'E.) ahead. This course leads mid-channel between Challenger Shoal and Havergal Shoal, about 0.8 mile West. When Ahet Island is open S of Sori Island, bearing 295°, the vessel will be S of Havergal Shoal. Then alter course W, steering for Browne Island until the W point of Sori Island bears 005°. Course should then be altered to about 004°, taking anchorage as convenient.

Vessels approaching from the N or E should steer for Sori Island and head for Mbuchonsaul Islet when it can be identified. Care should be taken that Mbuchonsaul Islet does not bear more than 230°, until Failure Rocks bears 177°; then follow the directions as above.

Caution.—Danger areas, each 183m in diameter, are situated in the following positions; distances, and bearings are from the charted position of a beacon 0.5 mile N of the E end of Noru Island. The beacon has been reported as missing.

- a. 1.35 miles bearing 326°.
- b. 0.95 mile bearing 328°.
- c. 0.70 mile bearing 318.5°.
- d. 0.25 mile bearing 340°.
- e. 1.66 miles bearing 124.5°.
- f. 2.55 miles bearing 110°.

Navigational aids in this area are not reliable.

9.63 Between **Aripau Point** (1°59'S., 146°44'E.) and Aheyos Point, the N extremity of Manus Island, about 7.8 miles ENE, the coast is first broken by headlands and bays; and then is unbroken. Malwes Island is about 3 miles WSW of the Aheyos Point; Sapa Lousa Island is 2 miles farther in the same direction. Both islands are surrounded by reefs.

Between Aheyos Point and the W entrance point of Balscot Bay, about 6.5 miles E, the coast is fairly regular and is fronted by a barrier reef. Numerous coral heads are between the barrier reef and the coast.

Balscot Bay, although small and reef-fringed, is deep and is reported to afford good anchorage for small vessels with local knowledge.

Between the E entrance point of Balscot Bay and the W entrance point of Drugal Bay, there are a number of prominent points and coves fringed by a wide coastal reef, with several off-lying shoals. A 3.2m shoal patch is charted near the head of the bay.

The coastal coral fringe continues as far as the W entrance of Bowat Bay, and is wide and without break. The bay is reported to be lined with mangroves, fringed with reefs, and very shoal. Bowat village and mission station are on the E side of the bay.

Anchorage.—Ponam Island is about 2 miles within the W end of the large barrier reef which fronts the N extremity of the island. Anchorage may be obtained by vessels, with local knowledge, between the large barrier reef and Manus Island, in depths of 21.9 to 31.1m, but the holding ground is not good and the anchorage is open to W winds. The channel W of the NW extremity of the barrier reef leading to the anchorage area has been swept to a depth of 12.2m. The anchorage area has been swept to depths of 9.1 to 12.2m. There are two 0.5 mile anchorage berths wire-dragged to 12m; three other berths have been wire-dragged to depths of 9.1 to 12.2m.

Caution.—Caution should be used when navigating outside the wire-dragged area because undetected coral heads may exist as well as those indicated on the chart; because the water is muddy, these dangers are hard to identify.

9.64 A string of islands, of which the largest and easternmost is Los Negros Island, extends E from the NE extremity of Manus Island and then curves around to the N and W, forming Seeadler Harbor. Lorengau Bay which is of commercial interest, Lombrum Bay and Papitalai Harbor, which are both military sites, indent the S shore of Seeadler Harbor. A number of coconut plantations are found along the shores of the harbor.

Tides—Currents.—The tidal rise at MHHW is 0.8m. At MLLW, the rise is about 0.2m. There is little current in the harbor.

Depths—Limitations.—Depths of 12.8 to 32.9m, interspersed with coral reefs having depths of 0.9m to 7.3m, are found throughout the harbor. Depths of at least 15.2m are found in the wire-dragged entrance channel between the reef fringing Ndrilo Island and that fringing Hauwei Island. The passage between the reef fringing Pityilu Island and that fringing Hauwei Island has depths of 4.6 to 12.8m in the fairway.

Aspect.—Ndrilo Island and Hauwei Island are planted in coconut palms and are about 27m high.

Rara Islet, densely wooded and about 37m high, is off the entrance of Lorengau Bay.

Pityilu Island is low and has some buildings on it. There is an airfield on the island, which is reported as unusable.

The NW end of Ndrilo Island is marked by a light close to an abandoned lighthouse.

Three conspicuous oil tanks are 0.3 mile WSW of Lombrum Point.

Pilotage.—Pilotage is not compulsory, but a pilot is available from Madang on 48 hours notice. Pilots board in the vicinity of a position 0.9 mile, bearing 127° from the abandoned lighthouse on Ndrilo Island. No tugs are available.

Anchorage.—Anchorage for a number of large ships is available in an area about 15 miles long and from 2 to 4 miles wide. A great number of berths for all size ships have been

established in the swept areas, which have been dragged to 6.1 to 15.2m. The holding ground is reported to be excellent, but a heavy swell sets into the harbor during the Northwest Monsoon. Vessels wishing to anchor during daylight hours should arrive not later than 1 hour prior to sunset.

Anchorage for merchant vessels can be taken, in 16.5m, good holding ground, about 0.3 mile SW of Rara Islet.

Anchorage for small vessels with local knowledge can be taken in Lombrum Bay and in Papitalai Harbor. There are two mooring buoys in Lombrum Bay.

A recommended anchorage is 1.3 miles, bearing 210° from Bear Point.

Directions.—Vessels should enter Seeadler Harbor by passing midway between the reefs fringing Ndrilo Island and Hauwei Island. The E point of Rara Islet bearing 200° leads through this passage. Vessels bound for the anchorage off Lorengau Bay should continue on this course, which will pass E of a 4.3m shoal lying 1 mile N of Rara Island and W of a shoal extending WSW from Rara Island. The track then leads S to Nabu Wharf, passing either W or E of a shoal which is marked by beacons at its E and W extremities.

Caution.—Numerous charted submerged dangers are in Seeadler Harbor; these are hard to identify when the waters are muddy. Care must be taken when navigating outside of swept areas because undiscovered dangers may exist.

Lorengau Bay is shoal, and it and Papitacai Harbor are encumbered with shoals and fringed by a reef.

9.65 Lorengau (2°01'S., 147°17'E.) ([World Port Index No. 56730](#)) consists of Nambu Wharf, a short T-headed pier which extends from the end of a causeway projecting from Parendo Point; the berth is unsafe for working cargo; the berth has a depth of 5.1m alongside. Salesia Wharf stands 1.5 miles ESE of Nambu Wharf.

A naval base situated at **Lombrum** (2°02'S., 147°23'E.) has a wharf alongside, which vessels up to 183m in length, with drafts of 10.1m, may berth. A small oil pier is available in Papitalai Harbor.

See Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia for details on regulations pertaining to vessels in the waters of Papua New Guinea. The Quarantine Anchorage may best be seen on the chart.

Hyane Harbor (2°03'S., 147°26'E.), on the E side of Los Negros Island, is small and reef-fringed. The harbor is suitable only for small vessels with not more than 3m draft; with local knowledge they can anchor, in 27.4m, in the S part of the harbor.

The entrance channel, marked by buoys, is only 46m wide and is 7.6m deep; considerable swell is reported outside the entrance during the Northwest Monsoon.

Islands and Dangers East and South of Manus Island

9.66 Nauna Island (2°12'S., 148°12'E.), the easternmost of the Admiralty Islands, is about 131m high and densely wooded. It has a cliffy N coast and is fringed by reefs extending about 183m offshore. A narrow sandy beach, with coconut palms, extends nearly around this small islet. A light is situated on the W side of the island.

The Los Reyes Islands, comprising Mbatmanda Island and Putuli Island, separated by a 1.5 mile wide passage, are about 17 miles NNW of Nauna Island. The islands are low, densely wooded, and about 49m high. The Los Reyes Islands have been reported to be 1.5 miles NE of their charted position.

Towi Island, small and of volcanic origin, is 4.75 miles WSW of Putuli Island. It is densely wooded and 46m high.

Tong Island, flat, densely wooded, and about 18m high, is 8.5 miles WSW of Towi Island. A danger area, 1 mile in diameter, is centered about 2 miles ENE of Tong Island.

Pak Island, 5 miles WSW of Tong Island, is about 21m high. The E and W ends of the island are forested and the area between is planted in coconut palms. The coasts are steep, rugged, and reef-fringed. A rock, with a depth of less than 1.8m, lies close W of the W end of Pak Island.

Ulu nau Island, small and reef-fringed, is separated from the N side of the W end of Pak Island by a narrow passage. A small jetty stands on the S side of the passage.

A shoal, with depth of 5.8m, is 1 mile NE of Ulu nau Island. A shoal, with a depth of 6.7m, is about 1.5 miles ENE of the same islet.

Small vessels with local knowledge can anchor, in 12.8 to 16.5m, a little over 0.5 mile E of Ulu nau Island.

Sea Reef, which is unexamined and has a least depth of 6.4m, extends 1.75 miles NNW from a position about 2.5 miles N of the W end of Pak Island.

Rambutyo Island is 306m high and wooded; its W part is low and flat. Backing the shore and encircling the island is a margin of low and undulating terrain that on the SW coast encompasses an area of considerable extent. The broad area of low ground is planted with coconut palms. Many huts are found along the shore and many pilings are found on the W side of the island.

The shores of the island are reef fringed. Langembulos Island, 18m high, is on the SW end of this reef. The Horno Islands are on the reef that extends about 6 miles NW from the N point of the island.

Islands and Dangers West of Rambutyo Island

9.67 The San Miguel Islands are two small coral atolls with six small islets, about 18m high and densely wooded. An area of irregular depths, having a least depth of 8.2m, extends about 2.5 miles S from a position about 2 miles SSW of Anabat Island, the S island of the group.

The Fedarb Islands consist of four densely-wooded and reef-fringed islands. They are separated from the above islands by an area of apparent foul ground. Sivisa Island, the E of the Fedarb Islands, has a prominent conical peak, about 76m high.

A danger area, on which the seas break heavily even in calm weather, is about 1 mile NE of Sivisa Island.

Lou Island, steep, rugged and having three peaks, is separated from the Fedarb Islands by foul ground. The island attains a height of 210m and is densely wooded. A reef extends SSW from the S end of the island. An islet, 37m high and surrounded by a shoal that extends 0.5 mile SSW from it, is about 1 mile S of the same end.

The Saint Andrew Islands, four in number, are at the NE end of a foul ground area. The islands are densely wooded and

from 18 to 21m high. Ngowui Island, which is on the E side of the N approach to Saint Andrew Anchorage, is about 18m high and densely wooded.

Waikatu Island is about 21m high and densely wooded. Foul ground extends about 0.4 mile E and SE from the E side of the island.

Paliai Island (2°27'S., 147°25'E.), E of the foul ground extending E from Waikatu Island, is about 18m high and densely wooded.

Anchorage.—Saint Andrew Anchorage has depths of 18 to 27m; it is exposed to all winds, but reefs and foul ground afford protection from heavy seas. Vessels with local knowledge approach from the NW. Anchorage can be taken, in 22m, with the S end of Waikatu Island in line bearing 258° with the N end of Paliai Island.

The Pam Islands, separated from Saint Andrew Islands by foul ground, consist of two similar size islets, on the same reef, and a smaller islet. They are about 107m and 75m high, respectively. Two small reefs are about 2 miles W and 1 mile WNW of the S island. A shoal is about 2 miles E of the same island.

Saint Andrew Strait, between Lou Island and Saint Andrew Island, should only be navigated by vessels with local knowledge and then under only the most favorable conditions of light. Several shoals are reported in the N approach, between Lou Island and the Fedarb Islands. Two of these are nearly in mid-channel. Both the N and SW entrances of the strait are reported to be foul.

Baluan Island (2°33'S., 147°17'E.) is about 246m high and covered with rainforest. The island has an even slope from summit to shore, except for a conical cliff on its NE coast. Foul ground extends up to 1 mile offshore. Several small islets are up to 1 mile off the NE coast; the NE attains a height of 77m.

Pearse Shoal, with a reported depth of 9m, is about 5 miles WNW of the W end of Baluan Island.

9.68 The **Papialou Islands** (2°44'S., 147°21'E.) are coral-fringed and 0.75 mile apart. The NE and larger island is 18m high and wooded; the SW island is 21m high and partly covered with low bushes. The reef surrounding the islands is reported as extending about 0.8 mile farther SW than charted.

Alim Island, about 22 miles SW of Baluan Island, is covered with coconut palms. It has been reported to be 1.25 miles WSW from its charted position. It is about 28m high and fringed by reef. An islet is about 1 mile SE of Alim Island on the fringing reef. A reef, about 1.3 miles long, N-S, and about 0.8 mile wide, has been reported to be with its center about 1.3 miles E of the S end of Alim Island. The island is marked by a light on its N end.

In 1989, a shoal, with a depth of 3m, was reported lying about 2.3 miles WNW of the N extremity of Alim Island. A detached circular coral reef, about 1 mile in circumference, lies about 1.5 miles ENE of the S extremity of the island.

A shoal, with a depth of 4.6m, is about 3 miles E of Alim Island.

The Johnston Islands, about 12 miles NW of Baluan Island, consists of a bushy islet and three small islands, about 30 to 38m high and densely wooded. Numerous reefs and shoal heads, some with depths of less than 1.8m, are reported in the vicinity of these islands. Their limits have not yet been clearly defined.

Stuart Bank, 2 miles WNW of the largest of the Johnston Islands, consists of a bare reef and sandbank. The highest part, near its center, is about 0.9m above HW. A reef was reported about 2 miles NNE of Stuart Bank.

Several shoals are between 4 miles W and 6 miles NW of the largest of the Johnston Islands. Numerous dangers are within 5 miles SW and 4 miles S of the same island.

Because of numerous uncharted reefs and shoals, vessels approaching Seeadler Harbor from the S have been reported to be using the following track: Pass midway between Papialou Island and Alim Island on a heading of about 356°, so as to pass midway between Baluan Island and Pearse Shoal. When abeam the N extremity of Baluan Island, alter course to about 030° so as to pass about 2 miles W of Lou Island. Then round Los Negros Island to the entrance of Seeadler Harbor.

Mbuke Island (2°23'S., 146°49'E.) is about 183m high. Numerous islands and dangers lie between it and the S coast of Manus Island. Reefs extend from the NE and SW sides of the island, and there are some dangers between it and the SW end of Manus Island.

A group of reefs, whose existence is doubtful, may be S and SW of Mbuke Island.

The Purdy Islands are a group of small coral islets lying about 40 miles SSW of the SW end of Manus Island. They are occasionally visited by inter-island vessels.

The Bat Islands, the W of the group, consist of two flat islands and an islet, covered with coconut palms and encircled by a coral reef, which is reported to be rather steep-to.

Mole Islet, at the E end of the group, and Mouse Islet, are about 3 miles apart in an ENE-WSW direction. The former is 0.75 mile long and much larger than Mouse Islet. The interior of Mole Islet is below sea level in places, and is swampy and covered with undergrowth. Its shores are sandy, and it is surrounded by a reef which forms an islet on the SW side of the island. Mouse Islet is wooded. Rat Islet, about 3 miles SW of Mouse Islet, lies on the SW end of a reef.

Islands and Dangers Southwest and West of Manus Island

9.69 Larsen Reef is about 22 miles W of Mbuke Island. The Sabben Islands, several islands on an extensive reef, are low and wooded; an extensive foul area is E and SE of these islands.

Western Island, the position of which is approximate, lies 35 miles W of Manus Island. Ships have reported passing within a few miles of the area in good visibility and made no visual or radar contact.

The **Hermit Islands** (1°30'S., 145°03'E.) are enclosed by a narrow barrier reef, which in most places is less than 1 mile wide. Several low islands lie on this reef and are covered with coconut palms. There are 17 islands within the lagoon, four of which are high and form a group at the center of the lagoon. All of these islands are wooded and reef-fringed; the smaller islands are connected to the larger islands by reefs. Hills, ranging from about 111 to 244m high and separated by valleys and low, narrow isthmuses, are found on the two large islands. Margins of low and gently sloping ground are found around the hills. Coconut palms are found on this ground and also on the isthmuses. Steep slopes alternate with stretches of sandy beach,

and in places, particularly around Luf Island, there is considerable mangrove along the shore.

Depths—Limitations.—There are no obstructions in the waters surrounding the atoll; depths of over 183m are found close outside the barrier reef.

There are three entrances leading into the lagoon; of these, **West Entrance** (1°31'S., 144°59'E.) is the only one suitable for large vessels. This entrance width is 1.65 miles, but a 9.1m shoal divides it into two channels. The S channel is further contracted by a shoal spit of 7.3 to 9.1m extending about 0.5 mile N from the barrier reef. Depths of over 13.7m are found in the N channel.

The N end of **Jalun Island** (1°32'S., 145°03'E.), in line bearing 109° with the 147m summit of **Luf Island** (1°32'S., 145°04'E.), leads through the N part of West Entrance. This leads about 0.3 mile S of the SW end of Northwest Reef, which is steep-to and clearly visible under favorable light conditions.

Anchorage.—Anchorage is available off the islands, with the preferred anchorage being off the S side of **Maron Island** (1°33'S., 145°02'E.), in 27m, mud.

Alacrity Harbor, an indentation in the NE side of the surrounding reef, affords good anchorage for small vessels, in about 25m, sand bottom. Coeran Passage, the N pass in the encumbered entrance, should be used; it is about 0.2 mile wide, with depths of 7.3m. Anchor in the middle of the harbor, having due regard for shoals.

The Kaniet Islands and the Sae Islands

9.70 The Kaniet Islands, about 38 miles NE of the Hermit Islands, consists of five small islets on a small coral atoll. They are within an area about 2.5 miles long in a NE-SW direction. They are low, flat, covered with coconut palms, and connected to each other by reefs. The N and largest island is about 0.5 mile long. There is sparse vegetation and some swampy areas. The reef fringing the group extends up to 0.5 mile offshore. There is a trading station on the S islet. Interisland vessels make occasional calls.

Caution.—These islands have been reported (1995) to lie 3 miles NE of their charted position.

The Sae Islands, about 15 miles NW of the Kaniet Islands, consist of two small islets connected by a drying reef in a NW-SE direction from each other. The NW and smaller of the two is nearly flat and covered with large trees and coconut palms. The SE island is higher and also wooded.

Caution.—These islands have been reported (1987) to lie 1.8 miles NE of their charted position.

The Ninigo Group and Adjacent Islands

9.71 **Liot Island** (1°24'S., 144°31'E.) is low, sandy, and densely wooded, with high trees. It is shaped like a horseshoe, open to the W. It is on the E edge of a reef enclosing a lagoon. A reef, with a depth of 9.1m, has been reported to be 5 miles NW of Liot Island.

Pupol Reef, with a depth of 9.1m, lies 4.5 miles WNW of Liot Island.

The Ninigo Islands are about 35 miles WNW of the Hermit Islands. The group consists of six atolls, separated from each

other by deep channels. There are about 50 narrow islets on the reefs, all low and flat, some of which are covered with coconut palms. There are some swampy areas. Copra, which is taken to **Longan Island** (1°13'S., 144°18'E.) ([World Port Index No. 56710](#)) on the NW side of Ninigo Atoll and to Mal in the S for shipment, is the chief export. A plantation manager resides on Longan Island. There is a trading station with a flagstaff at the E end of this island. Interisland vessels call occasionally at the anchorage off Longan Island.

Tides—Currents.—Strong currents are reported in some of the boat passages into the lagoon.

Depths—Limitations.—The passage into Ninigo Lagoon that is generally used is on the NW side between Longan Island and Meman Island. This passage, which is close to the E side of Meman Island, is about 228m wide between the fringing reefs. There is a depth of 8.2m in the fairway. Several 2.4m shoals are on a ledge that extends 0.3 mile SW from the W point of Longan Island.

A SW entrance into the lagoon exists 3.5 miles NE of Mal Island. The lagoon between the SE entrance and Lau Island is deep and clear of dangers. There is a small but prominent wooded islet on the reef 1 mile E of the E end of Mal Island. The SE entrance is marked and has a least depth of 11m, which quickly increases to 22m further in the lagoon. The reef patch at the far N of the E side of the SE entrance is marked. Between it and the tip of the reef immediately S, there is a least depth of 16.5m. When negotiating this passage between the reef patch and the reef to the S, vessels are advised to favor the S side.

The remaining passages are suitable only for small boats with local knowledge. The passage close E of Nuhu Island is unsafe as a result of an earthquake.

Anchorage.—Vessels with local knowledge can anchor, in 8.2m, about 0.2 mile from the E end of Longan Island, with the

flagstaff about 91m from the same point, bearing 335°. The holding ground is reported as good.

Vessels should keep over on the Meman Island side of the channel until the S end of that island bears more than 270° before altering the course E toward the anchorage.

Heina Lagoon and Pelleluha Lagoon and the passages leading into them are suitable only for small craft with local knowledge.

Caution.—The passages into the lagoons and the waters of the lagoon should be navigated with caution, because there are numerous coral heads, especially just within the entrances.

Islands West of the Ninigo Islands

9.72 Manu Island (1°19'S., 143°35'E.) is about 275m long, 18m high, wooded, and fringed by a reef. Anchorage can be found, in 18 to 36m, off the SE or NW corners of the island, depending on the monsoon.

Aua Island, 32 miles WSW of Manu Island, is a flat, coral island, about 36.5m high to the tops of the trees. From a distance of about 5 miles the S extremity appears as a bluff headland, and some rocks, above-water, may be seen extending a short distance from the NW point. The island is 2 miles long and is surrounded by a fringing reef. The E part of the island is planted with coconut palms and the W part is forested.

A reef has been reported to be about 16 miles N of Aua Island. In 1993, it was reported that this reef was not found; no breakers or rips were visible.

Wuvulu Island (1°43'S., 142°50'E.), 18 miles SW of Aua Island, is low and is covered with trees and coconut palms, the tops of which are about 37m above the water. It is about 3.5 miles long and is fringed by a steep-to reef. Near the center of the island are some swamps.

Awuane Island and Lumike Island are two small islets close off the W and N sides, respectively, of Wuvulu Island.